Stage 1-2 Archaeological Assessment, Tullis Whistle Bare Aggregates Pit

Part of Lots 27 and 28, Concession 12, Geographic Township of North Dumfries, Region of Waterloo, Ontario

Submitted to:
Mr. Shawn Milloy

Gateman Milloy

and

Ontario's Ministry of Heritage, Sport, Tourism and Culture Industries

Submitted by:

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ORIGINAL REPORT

February 17, 2022

Executive Summary

Detritus Consulting Ltd. ('Detritus') was retained by Shawn Milloy of Gateman Milloy ('the Proponent') to conduct a Stage 1-2 archaeological assessment on Part of Lots 27 and 28, Concession 12, Geographic Township of North Dumfries, Region of Waterloo, Ontario (Figure 1). This investigation was conducted in advance of the proposed Tullis Whistle Bare Aggregates Pit development (the 'Study Area') encompassing the properties located between 1821 and 1835 Whistle Bare Road. The Study Area comprises a roughly rectangular parcel of land covering about 41.1ha bounded by Whistle Bare Road to the north, Grand Valley Golf Course to the south, agricultural fields to the east and an aggregate pit to the west.

This archaeological investigation was triggered by the Provincial Policy Statement ('PPS') that is informed by the *Planning Act* (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger *Ontario Heritage Act* (Government of Ontario 1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet the conditions of this legislation, a Stage 1-2 assessment of the Study Area was conducted during the application stage of the development under archaeological consulting license P017 issued to Garth Grimes by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* ('*Standards and Guidelines*'; Government of Ontario 2011).

The Stage 1 background research indicated that the entire Study Area exhibited high potential for the identification and recovery of archaeological resources. The Stage 2 assessment was conducted between November 12, 2020 and September 30, 2021. The Study Area measures 41.1ha and includes in the entire development property. Fieldwork consisted of a typical pedestrian survey of the agricultural land that covered most of the Study Area and a typical test pit survey of the manicured lawn, overgrown grassy areas and woodlot that were inaccessible for ploughing. The existing structures, demolished structures, boulder pile, and all gravel surfaces throughout the Study Area were determined to have been previously disturbed and were photo documented only. The Study Area also contains permanently wet areas (two ponds and a wetland), which were evaluated as having no potential based on the Stage 2 identification of physical features of no or low archaeological potential, as per Section 2.1, Standard 2a of the *Standards and Guidelines* (Government of Ontario 2011). These permanently wet areas were mapped and photo documented only.

The Stage 2 archaeological assessment of the Study Area resulted in the documentation of a total of 60 Find Spots including three clusters of Euro-Canadian artifacts (Clusters H1, H2 and H3), one cluster of pre-contact Aboriginal artifacts (Cluster P1), three isolated diagnostic projectile points (Find Spot 42, Find Spot 49 and Find Spot 50) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60).

The Stage 2 test pit survey of **Cluster H1 (AiHc-545)** produced 208 Euro-Canadian artifacts from 27 positive test pits scattered across an area of 56m by 37m. In summary, artifacts found at AiHc-545 are dominated by ceramic fragments (n=105; 50.48%) and structural artifacts (n=80; 38.46%) with lesser numbers of artifacts classified as miscellaneous metal (n=11), household (n=9) and personal (n=3). The diversity of ware types and ceramic decorative styles at AiHc-545 provides evidence of site use spanning the early to late 19th century. The presence of pearlware, Jackfield-type ware and scalloped edge ware provide evidence of early 19th century site use while late palette painted, transfer printed and flow transfer printed pieces are suggestive of mid-to-late 19th century occupations. Based on these results, AiHc-545 has been interpreted as a medium-sized, early to late 19th century domestic deposit.

Given the presence of at least 20 artifacts that date the period of use to before 1900, **AiHc-545 meets the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011), and therefore retains**

CHVI. Therefore, a Stage 3 archaeological assessment is recommended for AiHc-545.

AiHc-545 though located within the Study Area is within an area not proposed for development (aggregates extraction).

Given that AiHc-545 was discovered outside the area proposed for development, the Proponent has elected to avoid and protect this site, as per Section 4.1 of the *Standards and Guidelines* (Government of Ontario 2011).

To meet the requirements for avoidance during construction, as outlined in Section 4.1.1 of the *Standards and Guidelines* (Government of Ontario 2011), it is recommended that **temporary fencing be installed around AiHc-545 and its protective buffer, and that construction activities within the 20m – 70m monitoring buffer be monitored by a licensed archaeological consultant in order to prevent any impacts to the site** (see below). If in the future AiHc-545 will be impacted by development, and no Stage 3 assessment is to be conducted at that time, the archaeological site and its protective buffer must be avoided and no construction impacts will be allowed. This protective buffer will extend 20m beyond the limits of the site, as documented during the Stage 2 assessment (see Tile 4 of the Supplementary Documentation). 'No-go' instructions will be issued to all on-site construction crews, engineers, architects and any others involved in day-to-day decisions during construction. The location of the area to be avoided will be marked on all contract drawings, where applicable, and will include explicit instructions to avoid this area.

Furthermore, a construction monitoring zone ranging from 20 metres to 70 metres from the boundaries of the sites on all sides will also be observed. A licensed archaeologist will be required to monitor any construction activities impacting these zones in order to prevent any construction impacts outside of the amended Study Area. According to Section 4.1.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), construction monitoring is required during all grading and other soil disturbing activities to verify the effectiveness of the avoidance strategies.

As per Section 7.9.9, Standard 1b of the *Standards and Guidelines* (Government of Ontario 2011), this letter from the proponent confirming that the avoidance measures outlined above will be implemented during construction is provided here in the Supplementary Documentation to this report. This letter also includes a construction monitoring schedule for all ground disturbance activity in the vicinity of the site and its protective buffer.

In order to meet the requirements for long term protection, as outlined in 4.1.4 of the *Standards and Guidelines* (Government of Ontario 2011), the Proponent will have **AiHc-545 and its protective buffer** mapped by an Ontario Land Surveyor (OLS) onto a topographic plan. A restrictive covenant will be registered on title that refers to the plan prepared by the OLS. This covenant will prohibit any activities that might alter **AiHc-545** and their protective buffers in any way, either temporarily or permanently. As per Section 4.1.4, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), such activities include, but are not limited to, tree removal, minor landscaping, or utilities installation.

Should avoidance and protection not be feasible, stage 3 assessment should take place.

The Stage 3 assessments of AiHc-545 will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Typically, a Stage 3 assessment for a site documented during a pedestrian survey of ploughed agricultural land begins with an intensive controlled surface pickup ('CSP') across the Stage 2 limits of site. AiHc-545 was identified during a test pit survey of a manicured lawn and overgrown grassy areas; therefore, the Stage 3 assessment of the site will consist of test unit excavation only, conducted as per Section 3.2.2 of the *Standards and Guidelines* (Government of Ontario 2011).

Because it is not yet evident if the level of CHVI at AiHc-545 will result in a recommendation to proceed to Stage 4 (see Section 4.3 above), the Stage 3 assessment at the site will consist of the hand excavation of 1m square test units across its Stage 2 limits, as per Table 3.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). Additional 1m test units,

amounting to 20% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding site and grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

The Stage 2 pedestrian survey of **Cluster H2 (AiHc-546)** identified a total of 12 artifacts including five glass bottle fragments, five pieces of undecorated ironstone (all with evidence of surface burning), one piece of moulded ironstone and one piece of window glass. Artifacts at AiHc-546 were found spread over an area measuring about 11m by 14m. Based on these results, AiHc-546 has been interpreted as a sparse scatter of late-19th to early 20th century domestic refuse. Given the paucity of artifacts it is difficult to draw any further conclusions regarding site function.

Given that the Stage 2 assessment of AiHc-546 produced only 12 Euro-Canadian artifacts dating from the late 19th century through the early 20th century, it does not meet the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011). **Therefore, a Stage 3 archaeological assessment is not recommended for AiHc-546 and it does not retain any further CHVI.**

The Stage 2 pedestrian survey of Cluster H3 (AiHc-547) identified a total of nine Euro-Canadian artifacts scattered within an area measuring 9m by 10m. Artifacts present include two glass bottle fragments, two ironstone fragments, two porcelain fragments and three pieces of RWE. Glass bottle fragments include pieces from clear and aqua coloured bottles. Both ironstone fragments are undecorated while one fragment likely represents a fragment of a plate. The three RWE pieces are all undecorated and are too small for identification according to ceramic function. Lastly, the two porcelain pieces include one painted ornate cup handle and one piece of polychrome decal printed hollowware. Based on the presence of RWE, decal printed porcelain, and ironstone, AiHc-547 has been interpreted as a small scatter of late-19th to early 20th century domestic refuse. Given the paucity of artifacts it is difficult to draw any further conclusions regarding site function.

Given that the Stage 2 assessment of AiHc-547 produced only nine Euro-Canadian artifacts dating from the late 19th century through the early 20th century, AiHc-547 does not meet the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011). **A Stage 3 archaeological assessment is not recommended for AiHc-547.**

The Stage 2 pedestrian survey of **Cluster P1 (AiHc-548)** recovered a side-notched projectile point made of Onondaga chert, one primary flake made of Onondaga chert and one secondary flake made of Onondaga chert (Plates 20-22). The projectile point most closely matches the attributes of a Brewerton Side-Notched projectile point type dating to the Middle Archaic (3000-2500 BCE). Based on the results of the Stage 2 assessment, AiHc-548 has been interpreted as a small activity area occupied by unspecified Aboriginal people during the Middle Archaic. Given the results of the Stage 2 assessment, **AiHc-548 meets the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011), and therefore retains CHVI. A Stage 3 archaeological assessment is recommended for AiHc-548.**

AiHc-545 though located within the Study Area is within an area not proposed for development (aggregates extraction).

Given that AiHc-548 was discovered outside the area proposed for development, the Proponent has elected to avoid and protect this site, as per Section 4.1 of the *Standards and Guidelines* (Government of Ontario 2011).

To meet the requirements for avoidance during construction, as outlined in Section 4.1.1 of the *Standards and Guidelines* (Government of Ontario 2011), it is recommended that **temporary**

fencing be installed around AiHc-548 and its protective buffer, and that construction activities within the 20m – 70m monitoring buffer be monitored by a licensed archaeological consultant in order to prevent any impacts to the site (see below). If in the future AiHc-548 will be impacted by development, and no Stage 3 assessment is to be conducted at that time, the archaeological site and its protective buffer must be avoided and no construction impacts will be allowed. This protective buffer will extend 20m beyond the limits of the site, as documented during the Stage 2 assessment (see Tile 4 of the Supplementary Documentation). 'No-go' instructions will be issued to all on-site construction crews, engineers, architects and any others involved in day-to-day decisions during construction. The location of the area to be avoided will be marked on all contract drawings, where applicable, and will include explicit instructions to avoid this area.

Furthermore, a construction monitoring zone ranging from 20 metres to 70 metres from the boundaries of the sites on all sides will also be observed. A licensed archaeologist will be required to monitor any construction activities impacting these zones in order to prevent any construction impacts outside of the amended Study Area. According to Section 4.1.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), construction monitoring is required during all grading and other soil disturbing activities to verify the effectiveness of the avoidance strategies.

As per Section 7.9.9, Standard 1b of the *Standards and Guidelines* (Government of Ontario 2011), this letter from the proponent confirming that the avoidance measures outlined above will be implemented during construction is provided here in the Supplementary Documentation to this report. This letter also includes a construction monitoring schedule for all ground disturbance activity in the vicinity of the site and its protective buffer.

In order to meet the requirements for long term protection, as outlined in 4.1.4 of the *Standards and Guidelines* (Government of Ontario 2011), the Proponent will have **AiHc-548 and its protective buffer** mapped by an Ontario Land Surveyor (OLS) onto a topographic plan. A restrictive covenant will be registered on title that refers to the plan prepared by the OLS. This covenant will prohibit any activities that might alter **AiHc-548** and its protective buffer in any way, either temporarily or permanently. As per Section 4.1.4, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), such activities include, but are not limited to, tree removal, minor landscaping, or utilities installation.

Should avoidance and protection not be feasible, stage 3 assessment should take place.

The Stage 3 assessments of AiHc-548 will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Typically, a Stage 3 assessment for a site documented during a pedestrian survey of ploughed agricultural land begins with an intensive controlled surface pickup ('CSP') across the Stage 2 limits of site. During the Stage 2 pedestrian survey at AiHc-548 all the artifact findspots were point-plotted and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP at the sites were met during the Stage 2 assessment. Because it is not yet evident if the level of CHVI at AiHc-548 will result in a recommendation to proceed to Stage 4, the Stage 3 assessment at the site will consist of the hand excavation of 1m square test units across its Stage 2 limits, as per Table 3.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). Additional 1m test units, amounting to 20% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding site and grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

The Stage 2 assessment identified three isolated diagnostic projectile points **(Find Spot 42 [AiHc-549], Find Spot 49 [AiHc-550] and Find Spot 50 [AiHc-551]) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60).** None of the seven isolated findspots documented throughout the Study Area meet any

of the criteria for additional assessment listed in Section 2.2, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011a). Therefore, the seven isolated findspots (AiHc-549, AiHc-550, AiHc-551, Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60) retains no further CHVI and are not recommended for Stage 3 assessment.

The Executive Summary highlights key points from the report only; for a more detailed discussion regarding the results of the current Stage 1-2 assessment, including a complete set of recommendations, the reader should examine the complete report.

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Project Personnel

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Acknowledgments

Generous contributions made by Shawn Milloy of Gateman Milloy and Chris Pidgeon and Jennifer Gaudet of GSP Group made this report possible.

1.0 Project Context

1.1 Development Context

Detritus Consulting Ltd. ('Detritus') was retained by Shawn Milloy and Gateman Milloy ('the Proponent') to conduct a Stage 1-2 archaeological assessment on Part of Lots 27 and 28, Concession 12, Geographic Township of North Dumfries, Region of Waterloo, Ontario (Figure 1). This investigation was conducted in advance of the proposed Tullis Whistle Bare Aggregates Pit development (the 'Study Area') encompassing the properties located between 1821 and 1835 Whistle Bare Road.

This archaeological investigation was triggered by the Provincial Policy Statement ('PPS') that is informed by the *Planning Act* (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger *Ontario Heritage Act* (Government of Ontario 1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet the conditions of this legislation, a Stage 1-2 assessment of the Study Area was conducted during the application stage of the development under archaeological consulting license P017 issued to Garth Grimes by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* ('*Standards and Guidelines*'; Government of Ontario 2011).

The purpose of a Stage 1 Background Study is to compile all available information about the known and potential archaeological heritage resources within a Study Area, and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the *Standards and Guidelines* (Government of Ontario 2011), the objectives of the following Stage 1 assessment are as follows:

- To provide information about the Study Area's geography, history, previous archaeological fieldwork and current land conditions;
- to evaluate in detail, the Study Area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property; and
- to recommend appropriate strategies for Stage 2 survey.

To meet these objectives Detritus archaeologists employed the following research strategies:

- A review of relevant archaeological, historic and environmental literature pertaining to the Study Area;
- a review of the land use history, including pertinent historic maps; and
- an examination of the Ontario Archaeological Sites Database ('ASDB') to determine the presence of known archaeological sites in and around the Study Area.

The purpose of a Stage 2 Property Assessment is to provide an overview of any archaeological resources within the Study Area; to determine whether any of the resources might be archaeological sites with cultural heritage value or interest ('CHVI'); and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the *Standards and Guidelines* (Government of Ontario 2011), the objectives of the following Stage 2 Property Assessment are as follows:

- To document all archaeological resources within the Study Area;
- to determine whether the Study Area contains archaeological resources requiring further assessment; and
- to recommend appropriate Stage 3 assessment strategies for archaeological sites identified.

The licensee received permission from the Proponent to enter the Study Area and conduct all required archaeological fieldwork activities, including the recovery of artifacts.

1.2 Historical Context

1.2.1 Post-Contact Aboriginal Resources

The late seventeenth and early eighteenth centuries represent a watershed moment in the evolution of the post-contact Aboriginal occupation of Southern Ontario. At this time, various Iroquoian-speaking communities began migrating into southern Ontario from New York State, followed by the arrival of Algonkian-speaking groups from northern Ontario (Konrad 1981; Schmalz 1991). This period also marks the arrival of the Mississaugas into Southern Ontario and, in particular, the watersheds of the lower Great Lakes.

The oral traditions of the Mississaugas, as told by Chief Robert Paudash and recorded in 1904, suggest that the Mississaugas defeated the Mohawk Nation, who retreated to their homeland south of Lake Ontario. Following this conflict, a peace treaty was negotiated between the two groups and, at the end of the seventeenth century, the Mississaugas settled permanently in Southern Ontario, including within the Niagara Peninsula (Praxis Research Associates n.d.). Around this same time, members of the Three Fires Confederacy (Chippewa, Ottawa, and Potawatomi) began immigrating from Ohio and Michigan into southwestern Ontario (Feest and Feest 1978:778-79).

In 1722, the Five Nations adopted the Tuscarora in New York becoming the Six Nations (Pendergast 1995:107). Sir Frederick Haldimand, Governor of Québec, made preparations to grant a large plot of land in south-central Ontario to those Six Nations who remained loyal to the Crown during the American War of Independence. More specifically, Haldimand arranged for the purchase of the Haldimand Tract in south-central Ontario from the Mississaugas. The Haldimand Tract, also known as the 1795 Crown Grant to the Six Nations, was provided for in the Haldimand Proclamation of October 25th, 1784 and was intended to extend a distance of six miles on each side of the Grand River from mouth to source. By the end of 1784, representatives from each member nation of the Six Nations, as well as other allies, relocated to the Haldimand Tract with Joseph Brant (Tanner 1987: 77-78; Weaver 1978: 525).

The Study Area first enters the Euro-Canadian historical record as part of the Haldimand Tract which:

> *…is a parcel or tract of land given to the Six Nations Indians, by Governor Haldimand October 25th, 1784, …and conveyed by Grant the 14th of January, 1793. … This Grant was composed of the following Townships: Dunn, Sherbrooke, Moulton, Canborough, North and South Cayuga, Oneida and Seneca in Haldimand County; Tusc[aro]ra, Onondaga, Brantford and South Dumfries in Brant County; North Dumfries, Waterloo and Woolwich in Waterloo County; Pilkington and Nichol in Wellington County; and is described as a parcel or tract of land six miles on each side of the Ouse or Grand River from it's mouth toward its source, to be bounded by the tract of land deeded December the 7th, 1792 by the Mississa[u]ga Chiefs and people to the Crown. This part was set aside as a suitable retreat for the Six Nation Indians who had shewn attachment and Fidelity to the British Government during the troublous times 1759 to 1783 and was granted to the Chiefs, Warriors, Women and People of the Six Nations and their heirs forever.*
>
> Morris 1943:19-21

The size and nature of the pre-contact settlements and the subsequent spread and distribution of Aboriginal material culture in Southern Ontario began to shift with the establishment of European settlers in Southern Ontario. By 1834, it was accepted by the Crown that losses of portions of the Haldimand Tract to Euro-Canadian settlers were too numerous for all lands to be returned. Lands in the Lower Grand River area were surrendered by the Six Nations to the British

Government in 1832, at which point most Six Nations people moved into Tuscarora Township in Brant County and a narrow portion of Oneida Township (Page & Co. 1879:8; Tanner 1987:127; Weaver 1978:526). Following the population decline and the surrender of most of their lands along the Credit River, the Mississaugas were given 6000 acres of land on the Six Nations Reserve, establishing the Mississaugas of New Credit First Nation in 1847 (Smith 2002:119).

Despite the inevitable encroachment of European settlers on previously established Aboriginal territories, "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought" (Ferris 2009:114). As Ferris observes, despite the arrival of a competing culture, First Nations communities throughout Southern Ontario have left behind archaeologically significant resources that demonstrate continuity with their pre-contact predecessors, even if they have not been recorded extensively in historical Euro-Canadian documentation.

1.2.2 Euro-Canadian Resources

The Study Area is located within the Geographic Township of North Dumfries in the historical County of Waterloo, now in the Region of Waterloo, Ontario (Figure 1).

On July 24, 1788, Sir Guy Carleton, the Governor-General of British North America, divided the Province of Québec into the administrative districts of Hesse, Nassau, Mecklenburg and Lunenburg (Archives of Ontario 2009). Further change came in December 1791 when the Province of Québec was rearranged into Upper Canada and Lower Canada under the Constitutional Act. Colonel John Graves Simcoe was appointed as Lieutenant-Governor of Upper Canada; he initiated several initiatives to populate the province including the establishment of shoreline communities with effective transportation links between them (Coyne 1895:33).

In July 1792, Simcoe divided Upper Canada into 19 counties, including Waterloo County, stretching from Essex in the west to Glengarry in the east. Later that year, the four districts originally established in 1788 were renamed as the Western, Home, Midland and Eastern Districts.

Official settlement of North Dumfries Township began in 1816, although Euro-Canadian settlers and squatters were present before the registered survey (Byerly 1935). Prior to this, the land represented an undeveloped parcel of land identified as Block One within the northern part of the Haldimand Tract. In 1795, under authority from the Six Nations' chiefs, Joseph Brant began to sell these parcels of undeveloped land, including Block One to Phillip Steadman (Moyer 1971). Steadman died shortly after taking possession of the land and it was transferred to his sister Mrs. Sparkman. In 1811, Mr. and Mrs. Sparkman conveyed the land to Mr. Thomas Clarke who then conveyed it to his cousin Mr. William Dickson in 1816. Dickson was a prominent Niagara merchant and land speculator. He established and named the township and initiated official survey for settlement (Figure 2).

The survey was led by Deputy Provincial Surveyor Adrian Marlett between October 1816 and May 1817 (Taylor 1970). It was completed according to the single front survey system with multiple modifications likely resulting from the challenging terrain and heavy bush encountered upon arrival (Dean 1969). The standard single front system divides the land into five lots containing 200-acre parcels surrounded by roads. The survey team accessed the land from East River Road beginning in Paris and ending in Galt (Taylor 1970).

Generally, settlement of the township was slow with the exception of the area between Galt and Branchton. A member of the original survey party from New York State, William Mackenzie, along with approximately seven others, returned to settle the area shortly after the survey was completed (Taylor 1970). At the end of 1817, there were 38 families living in Dumfries Township (Walker & Miles 1877). Subsequent municipal acts in 1849 and 1852 saw the township divided in two with the northern half renamed North Dumfries and amalgamated within the County of Waterloo. By this time Galt had already been established and was a thriving town (Waterloo Regional Museum 2018). By the 1880s, settlement within North Dumfries Township had been

complete for more than a generation and the population was reported to be 3,283 (Ontario Agricultural Commission 1881).

The *Illustrated Historical Atlas of Waterloo and Wellington Counties, Ontario* ('*Historical Atlas*'), demonstrates the extent to which North Dumfries Township had been settled by 1877 (Walker & Miles 1877; Figure 2). An increasing population throughout the late 19th century is evident from the number of villages and small towns indicated, the town lots for the cities of Ayr and Galt (now Cambridge), as well as a branch of the Grand Trunk, the Credit Valley and Great Western Railways, which transect the township.

According to the *Historical Atlas* map of North Dumfries the southern half of Lot 27 and Lot 28, Concession 12 lists no landowner and illustrates no structures or orchards (Figure 2). Located to the east of the Study Area, on Lots 23, 24, and 25 is the early community of Whistlebare. The early community of Galt is illustrated to the east of the Study Area. Additionally, the Credit Valley Railway the Grand Trunk Railway and the Great Western Railway are illustrated to the south and east of the Study area running through Galt.

Although significant and detailed landowner information is available on the *Historical Atlas* map of North Dumfries Township (Walker & Miles 1877; Figure 2), it should be recognized that historical county atlases were funded by subscriptions fees and were produced primarily to identify factories, offices, residences and landholdings of subscribers. Landowners who did not subscribe were not always listed on the maps (Caston 1997). Moreover, associated structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

1.3 Archaeological Context

1.3.1 Property Description and Physical Setting

The Study Area comprises a roughly rectangular parcel of land bounded by Whistle Bare Road to the north, Grand Valley Golf Course to the south, agricultural fields to the east and an aggregate pit to the west. As was noted previously, this area corresponds with the properties located between 1821 and 1835 Whistle Bare Road.

The Study Area measures 41.1 hectares and spans the entire development property (Figure 4). At the time of assessment, the Study Area included the residential property at 1821 Whistle Bare Road containing a house, driveway, manicured lawn with trees and a series of agricultural outbuildings. Based on aerial imagery, a swimming pool occurred to the south of the residence and several of the associated outbuildings have been demolished in the last few years. The residential property is surrounded to the west, south and east by active agricultural fields. A wooded area encircling permanently wet areas and a road loop occurs along the southern boundary of the Study Area.

The majority of the region surrounding the Study Area has been subject to European-style agricultural practices for over 100 years, having been settled by Euro-Canadian farmers by the early 19th century. Much of the region continues to be used for agricultural purposes today.

The Study Area is situated within the Guelph Drumlin Field. According to Chapman and Putnam,

> *…the Guelph drumlin field occupies an area of 320 square miles lying northwest, or in front of the Paris Morraine. Within this area, including parts of the Regional Municipalities of Hamilton-Wentworth, Waterloo, and Halton, and part of Wellington County, there are approximately 300 drumlins of all sizes. For the most part these hills are of the broad oval type with slopes less steep than those of the Peterborough drumlins.*
>
> Chapman and Putnam 1984:174-76

Drumlins are typically formed of till, in this case the unsorted debris deposited by glaciers, or a mixture of sand and gravel. The soils throughout the region vary from moderate to well drained and are considered very suitable for agriculture. The original forest cover probably consisted of a mix of pines and hardwoods, such as sugar maple, oak, beech and cherry. This pattern of forest

cover is characteristic of areas of clay soil within the Maple - Hemlock Section of the Great Lakes - St. Lawrence Forest Province - Cool Temperate Division (McAndrews and Manville 1987:43).

The closest source of potable water to the Study Area is a tributary of Cedar Creek, located approximately 200m to the southwest of the Study Area. Additional nearby sources of potable water include a tributary of Blair Creek located about 250m to the north of the Study Area. Looking further afield, Blair Creek drains into the Grand River which is located only about 2.6 km to the northeast.

1.3.2 Pre-Contact Aboriginal Land Use

The Study Area occupies a portion of Southwestern Ontario that has been occupied by people as far back as 11,000 years ago as the glaciers retreated. For the majority of this time, people were practicing hunter gatherer lifestyles with a gradual move towards more extensive farming practices. Table 1 provides a general outline of the cultural chronology of North Dumfries Township, based on Ellis and Ferris (1990).

Table 1: Cultural Chronology for the North Dumfries Township

Time Period	Cultural Period	Comments
9500 – 7000 BC	Paleo-Indian	first human occupation hunters of caribou and other extinct Pleistocene game nomadic, small band society
7500 - 1000 BC	Archaic	ceremonial burials increasing trade network hunter gatherers
1000 - 400 BC	Early Woodland	large and small camps spring congregation/fall dispersal introduction of pottery
400 BC – AD 800	Middle Woodland	kinship based political system incipient horticulture long distance trade network
AD 800 - 1300	Early Iroquoian (Late Woodland)	limited agriculture developing hamlets and villages
AD 1300 - 1400	Middle Iroquoian (Late Woodland)	shift to agriculture complete increasing political complexity large palisaded villages
AD 1400 - 1650	Late Iroquoian	regional warfare and political/tribal alliances destruction of Huron and Neutral

1.3.3 Previous Identified Archaeological Work

In order to compile an inventory of archaeological resources, the registered archaeological site records kept by the MTCS were consulted. In Ontario, information concerning archaeological sites stored in the ASDB (Government of Ontario n.d.) is maintained by the MTCS. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13km east to west and approximately 18.5km north to south. Each Borden Block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The Study Area under review is within Borden Block AiHc.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990c). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MHSTCI will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

According to the ASDB, 14 archaeological sites have been registered within 1km radius of the Study Area (Table 2). Of the 14 sites, 11 are pre-contact Aboriginal dating from the Paleoindian through Late Woodland periods, one is multicomponent (AiHc-503) and two sites are post-contact Euro-Canadian. Pre-contact sites include two camps or campsites (AiHc-6 and AiHc-500), six findspots and one unknown site. Euro-Canadian sites include one homestead site with a blacksmith shop (AiHc-128) and an artifact scatter (AiHc-431). The multicomponent site (AiHc-503) consists of a Euro-Canadian domestic refuse scatter and a pre-contact lithic scatter.

Table 2: Registered Archaeological Sites within 1km of the Study Area

Borden Number	Site Name	Time Period	Affinity	Site Type
AiHc-6	W.C. Barrie 1	Late Woodland	Aboriginal	camp / campsite
AiHc-127	Whistle Bare 1	Late Archaic, Early Woodland	Aboriginal	findspot
AiHc-128	Whistle Bare 2	Post-Contact	Euro-Canadian	blacksmith shop and homestead
AiHc-129	Whistle Bare 3	Middle Woodland	Aboriginal	findspot
AiHc-130	Whistle Bare 4	Middle Archaic	Aboriginal	findspot
AiHc-131	Whistle Bare 5	Paleo-Indian	Aboriginal	findspot
AiHc-132	Whistle Bare 6	Middle Woodland	Aboriginal	findspot
AiHc-367	Asparagus 3	Pre-Contact	Aboriginal	findspot
AiHc-431		Post-Contact	Euro-Canadian	scatter
AiHc-432		Pre-Contact	Aboriginal	unknown
AiHc-500		Pre-Contact	Aboriginal	camp / campsite
AiHc-501		Pre-Contact	Aboriginal	unknown
AiHc-502		Pre-Contact	Aboriginal	findspot
AiHc-503		Post-Contact and Pre-Contact	Euro-Canadian and Aboriginal	domestic scatter / rubbish pit

Archaeologists have previously conducted archaeological assessments on the adjacent properties to the east and across Whistle Bare Road to the north. Archaeological Research Associates Ltd. (ARA) conducted an archaeological assessment of the adjacent agricultural fields to the east of the Study Area prior to the development of a gravel pit (ARA 1994). The investigation resulted in the documentation of sites AiHc-127 through AiHc-132. Aside from site AiHc-129, all these sites occur at over 250m to the east of the Study Area. Site AiHc-129 occurs about 100m to the southeast of the Study Area and consists of an isolated diagnostic projectile point dating to the Middle Archaic. The remaining sites include four isolated pre-contact diagnostic projectile points dating from the Paleo-Indian through Late Woodland (AiHc-127, AiHc-130, AiHc-131, AiHc-132) and a Euro-Canadian homestead site with an associated blacksmith shop (AiHc-128).

Additionally, Detritus conducted a Stage 1-2 archaeological assessment of the Whistle Bare Campground located on the north side of Whistle Bare Road opposite the current Study Area (Detritus 2020a). The project identified three pre-contact sites including AiHc-500, AiHc-501 and AiHc-502 as well as one multi-component site (AiHc-503). In 2020, Detritus conducted Stage 3 archaeological excavations at AiHc-500 and the following year continued with the Stage 4 excavations (Detritus 2020b). Additionally, Detritus conducted Stage 3 excavations at the Euro-Canadian site AiHc-503 in 2021 (Detritus 2021).

Site AiHc-500 is a pre-contact Aboriginal site located over 300m to the north of the current Study Area. Based on the results of the Stage 3 assessment, Detritus determined that the site is a medium-sized activity area occupied seasonally by pre-contact Aboriginal people and characterized by late-stage lithic reduction for the production and maintenance of formal tools and projectile points (Detritus 2020b). Detritus completed fieldwork for the Stage 4 excavations at this site in late 2021 and the report is in progress at this time.

Following the Stage 3 assessment of site AiHc-503, Detritus interpreted the site as a rubbish pit associated with a Euro-Canadian occupation from the middle 19th century until the early 20th century. According to the land registry records for Lot 28, Concession 12, North Dumfries, the period of occupation represented by the Stage 3 assemblage corresponds with the tenureship of the Wallace family, who owned the land between 1835 and 1896. The Stage 3 assessment also recovered a total of 24 pre-contact Aboriginal artifacts. Detritus recommended a Stage 4 archaeological mitigation of impacts to the site exclusively for the pre-contact Aboriginal component of AiHc-503. The site is located within 50m of the Study Area on the north side of Whistle Bare Road.

To the best of Detritus' knowledge, no other assessments have been conducted and no other sites are registered within 50m of the Study Area.

1.3.4 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Detritus applied archaeological potential criteria commonly used by the MHSTCI to determine areas of archaeological potential within Study Area. According to Section 1.3.1 of the *Standards and Guidelines* (Government of Ontario 2011), these variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, when considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. As per Section 1.3.1 of the *Standards and Guidelines* (Government of Ontario 2011), water sources may be categorized in the following manner:

- Primary water sources, lakes, rivers, streams, creeks;
- secondary water sources, intermittent streams and creeks, springs, marshes and swamps;
- past water sources, glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and
- accessible or inaccessible shorelines, high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

As was discussed above, the closest source of potable water is a tributary of Cedar Creek, which is located approximately 200m to the southwest of the Study Area.

Soil texture is also an important determinant of past settlement, usually in combination with other factors such as topography. The Study Area is situated within the Guelph Drumlin Field Region. As was discussed earlier, the soils within this region are imperfectly drained, but suitable for pre-contact and post contact Aboriginal agricultural. Given this, the distance to potable water, the 11 pre-contact Aboriginal sites registered within 1km of the Study Area and the length of occupation of North Dumfries Township prior to the arrival of Euro-Canadian settlers, the pre-contact and post-contact Aboriginal archaeological potential of the Study Area is judged to be high.

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the Ontario Heritage Act (Government of Ontario 1990b) or property that local histories or informants have identified with possible historical events.

The Historical Atlas (Walker & Miles 1877; Figure 2) map of North Dumfries Township has revealed that the Study Area is near a number of historical roads, the early community of Galt as well as a branch of the Grand Trunk, the Credit Valley and Great Western Railways, which transect the township. Also considering the presence of three Euro-Canadian sites within 1km of the Study Area and the potential for post-contact Euro-Canadian archaeological resources is judged to be high.

Additionally, despite the factors mentioned above, extensive land disturbance can eradicate archaeological potential within a Study Area, as outlined in Section 1.3.2 of the Standards and Guidelines (Government of Ontario 2011). Current aerial imagery of the Study Area identified several potential disturbance areas in the southcentral and northeastern portions of the Study Area. The northeastern portion of the Study Area is a residential property containing a house, swimming pool (demolished), various outbuildings, gravel driveway and a gravel roadway (Figure 3). The gravel roadway leads from the residence to the south and ends in a loop near wooded area with two ponds and a wetland. Based on aerial imagery, the area surrounding the roadway loop has been disturbed by heavy machinery use and includes a large boulder pile (Photo 53). Furthermore, the south-central portion of the Study Area also includes two ponds and a wetland that are permanently wet. As per Section 2.1.8, Standard 1 of the Standards and Guidelines (Government of Ontario 2011), it is recommended that these areas be subject to a Stage 2 property inspection, conducted according to Section 1.2 of the Standards and Guidelines (Government of Ontario 2011), to confirm and document the disturbed and permanently wet areas.

2.0 Field Methods

The Stage 2 assessment was conducted between November 12, 2020 and September 30, 2021 under the license P017 issued to Garth Grimes by the MHTSCI. During field investigations, the conditions were excellent and at no time were the field, weather, or lighting conditions detrimental to the identification or recovery of archaeological materials. Photos 1 through 57 demonstrate the field conditions throughout the Study Area at the time of the assessment, including areas that met the requirements for a Stage 2 archaeological assessment, as per Section 7.8.6, Standards 1a and b of the *Standards and Guidelines* (Government of Ontario 2011). Figure 4 illustrates the Stage 2 assessment methods, including all photograph locations and directions; Figure 5 illustrates the Stage 2 assessment methods in relation to the current development map.

Table 3: Field and Weather Conditions

Date	Field Director	Activities	Weather	Soil Conditions
November 12, 2020	M. Gibson	test pitting	sunny, high of 12°C	soil dry and screened easily
December 23, 2020	M. Gibson	pedestrian survey	overcast, high of 7°C	soil dry, >80% visibility
March 16, 2021	M. Gibson	pedestrian survey	overcast, high of 4°C	soil dry, >80% visibility
August 9, 2021	M. Gibson	pedestrian survey	sunny, high of 31°C	soil dry, >80% visibility
September 30, 2021	J. Peart	pedestrian survey and test pitting	sunny, high of 22°C	soil dry and screened easily; >80% surface visibility

The limits of the Study Area were recognised in the field by means of Whistle Bare Road to the north, Grand Valley Golf Course to the south, agricultural fields to the east and an aggregate pit to the west. The Study Area measures 41.1 hectares and includes the entire development property (Figure 4). At the time of assessment, the Study Area included the residential property at 1821 Whistle Bare Road containing a house, driveway, manicured lawn with trees and a series of agricultural outbuildings. Based on aerial imagery, a swimming pool occurred to the south of the residence and several of the associated outbuildings have been demolished in the last few years (Figure 3). The residential property is surrounded to the west, south and east by active agricultural fields. A wooded area encircling permanently wet areas and a road loop occurs along the southern boundary of the Study Area.

Approximately 90% (36.9ha) of the Study Area comprised large agricultural fields that were accessible to ploughing, and thus met the criteria for a Stage 2 pedestrian survey, as per Section 2.1.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). The land was ploughed and allowed to weather prior to the pedestrian survey, as per Section 2.1.1, Standards 2 and 3 of the *Standards and Guidelines* (Government of Ontario 2011). The ploughing was deep enough to provide total topsoil exposure and provided a minimum of 80% surface visibility as per Section 2.1.1, Standards 4 and 5 of the *Standards and Guidelines* (Government of Ontario 2011). The ploughed land was subject to pedestrian survey at a 5m interval in accordance with Section 2.1.1, Standard 6 of the *Standards and Guidelines* (Government of Ontario 2011; Photos 15-28, 30-40, 42-43 and 52). During the pedestrian survey, when archaeological resources were recovered, survey intervals were intensified to 1m within a 20m radius of the find as per Section 2.1.1 Standard 7 of the *Standards and Guidelines*. This approach was taken to establish whether the artifact was an isolated find or part of a larger artifact scatter.

The pedestrian survey resulted in the identification of two clusters of Euro-Canadian artifacts (Clusters H2 and H3), one cluster of pre-contact Aboriginal artifacts (Cluster P1), three isolated diagnostic projectile points (Find Spot 42, Find Spot 49 and Find Spot 50) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60). Of the cultural resources identified during the pedestrian survey, six were registered with the MHSTCI as Cluster H2 (AiHc-546), Cluster H3 (AiHc-547), Cluster P1 (AiHc-548), Find Spot 42 (AiHc-549), Find Spot 49 (AiHc-550) and Find Spot 50 (AiHc-551). The remaining four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60) do not meet the criteria for site registration as per Section 7.12 of the *Standards and Guidelines* (Government of Ontario 2011).

Artifacts identified during the pedestrian survey were recorded according to a specific findspot designation and was collected for laboratory analysis and description, as per Section 2.1.1, Standard 8 of the *Standards and Guidelines* (Government of Ontario 2011). A reading was taken for each findspot location, in addition to two fixed reference landmarks as per Section 2.1, Standard 4 and Section 5.0, Standard 2a of the *Standards and Guidelines* (Government of Ontario 2011). All coordinates were taken using a Garmin eTrex 10 GPS unit with a minimum accuracy 1-2.5m (North American Datum 1983 ('NAD83') and UTM Zone 17T) and are presented in the Supplementary Documentation to this report. Detritus used this mapping to identify any clusters within the surface finds that met the criteria for Stage 3 assessment as outlined in Section 2.2 of the *Standards and Guidelines* (Government of Ontario 2011).

Approximately 7% (2.98ha) of the Study Area consisted of areas that were inaccessible for ploughing, including the manicured lawn, overgrown grassy areas, and wooded areas. These areas were subject to a standard test pit survey at 5m intervals, as per Section 2.1.2, Standards 1 and 2 of the *Standards and Guidelines* (Government of Ontario 2011; Photos 1-14, 29, 41, 44-51 and 54). Test pits were excavated to within 1m of all standing structures, or until test pits demonstrated evidence of recent ground disturbance as per Section 2.1.2, Standard 4 of the *Standards and Guidelines* (Government of Ontario 2011). All test pits were at least 30 centimetres ('cm') in diameter and were excavated 5cm into sterile subsoil as per Section 2.1.2, Standards 5 and 6 of the *Standards and Guidelines* (Government of Ontario 2011). The soils were then examined for stratigraphy, cultural features, or evidence of fill. All soil from the test pits were screened through six-millimetre ('mm') hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit, as per Section 2.1.2, Standards 7 and 9 of the *Standards and Guidelines* (Government of Ontario 2011). Test pits averaged in depth from 25 to 45cm and contained a single stratigraphic layer; considering that each test was excavated 5cm into sterile subsoil, this observed soil layer ranged in depth from 20 to 40cm.

The test pit survey resulted in the documentation of a single Euro-Canadian site, identified as Cluster H1 (AiHc-545). The Stage 2 assessment of AiHc-545 produced 208 Euro-Canadian artifacts from 27 positive test pits scattered across an area of 56m by 37m. All the artifacts were recorded with reference to their associated test pits and retained for laboratory analysis as per Section 2.1.2, Standard 8 of the *Standards and Guidelines* (Government of Ontario 2011). In accordance with Section 5, Standard 2b of the *Standards and Guidelines* (Government of Ontario 2011) a UTM coordinate was recorded for each positive test pit in addition to a fixed reference landmark. Given that it was evident AiHc-545 fulfilled the criteria for additional assessment, no additional survey methods were employed. The site was registered with the MHSTCI, as per Section 7.12, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011).

Approximately 1% (2.28ha) of the Study Area comprised the disturbance areas identified on the recent aerial imagery of the Study Area and verified through test pitting. Following a Stage 2 property inspection (see Section 1.3.4 above), the existing structures, boulder pile, demolished structures, and all gravel surfaces (roadway and road loop) were evaluated as having no potential based on the identification of extensive and deep land alteration that has severely damaged the integrity of archaeological resources, as per Section 2.1, Standard 2b of the *Standards and Guidelines* (Government of Ontario 2011). The disturbed areas were mapped and photo documented in accordance with Section 2.1, Standard 6 and Section 7.8.1, Standard 1b of the *Standards and Guidelines* (Government of Ontario 2011; Photos 6-14 and 53).

The remaining approximately 0.2% of the Study Area comprised ponds and wetlands, which were evaluated as having no potential based on the Stage 2 identification of physical features of no or low archaeological potential, as per Section 2.1, Standard 2a of the *Standards and Guidelines* (Government of Ontario 2011). These permanently wet areas were mapped and photo documented only (Photos 47, 50 and 55) in accordance with Section 7.8.1, Standard 1b of the *Standards and Guidelines* (Government of Ontario 2011).

3.0 Record of Finds

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0 above, resulting in the documentation of a total of 60 Find Spots including three clusters of Euro-Canadian artifacts (Clusters H1, H2 and H3), one cluster of pre-contact Aboriginal artifacts (Cluster P1), three isolated diagnostic projectile points (Find Spot 42, Find Spot 49 and Find Spot 50) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60). An inventory of the documentary record generated by the fieldwork is provided in Table 4 below.

Table 4: Inventory of Document Record

Document Type	Current Location	Additional Comments
3 page of field notes	Detritus office	Stored digitally in project file
1 map provided by the Proponent	Detritus office	Stored digitally in project file
5 field maps	Detritus office	Stored digitally in project file
115 photographs	Detritus office	Stored digitally in project file

All the material culture collected during the Stage 2 survey is contained in one box and will be temporarily housed in the offices of Detritus until formal arrangements can be made for its transfer to Her Majesty the Queen in right of the Province of Ontario or another suitable public institution acceptable to the MHSTCI and the Study Area's owners.

3.1 Cultural Material

The Stage 2 archaeological assessment resulted in the documentation of a total of 60 Find Spots including three clusters of Euro-Canadian artifacts (Clusters H1, H2 and H3), one cluster of pre-contact Aboriginal artifacts (Cluster P1), three isolated diagnostic projectile points (Find Spot 42, Find Spot 49 and Find Spot 50) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60).

3.1.1 Pre-Contact Aboriginal Artifacts

The majority of the pre-contact Aboriginal artifacts recovered during the Stage 2 assessment were manufactured from Onondaga chert. Additionally, two flakes were manufactured from Haldimand chert. Chert type identifications were accomplished visually using reference materials located online or in personal collections.

Onondaga formation chert is from the Middle Devonian age, with outcrops occurring along the north shore of Lake Erie between Long Point and the Niagara River (Eley and von Bitter 1989). Primary outcrops have also been reported along the banks of the Grand River (Ellis and Ferris. 1990). It is a high-quality raw material frequently utilized by pre-contact people and often found at archaeological sites in southern Ontario. Onondaga chert occurs in nodules or irregular thin beds. It is a dense non-porous rock that may be light to dark grey, bluish grey, brown or black and can be mottled with a dull to vitreous or waxy lustre (Eley and von Bitter 1989).

Haldimand chert, also referred to as Bois Blanc, is a medium quality raw material that outcrops along the Bois Blanc formations between Kohler and Hagersville, and in Cayuga. In addition to formation outcroppings, it can also be found as glacial deposits in Southern Ontario. Dating to the Early Silurian, Haldimand chert derives from chalk-bearing limestones that give the material its characteristically white to light grey, or buff colour and relatively low lustre (Eley and von Bitter 1989).

Furthermore, all pieces of chipping detritus were subject to morphological analysis following the classification scheme described by Lennox, Dodd and Murphy for the Wiacek Site (Lennox *et al.* 1986) and expanded upon by Fisher for the Adder Orchard site (Fisher 1997). The flake types that were identified during the analysis of current Stage 2 assemblage include primary flakes, secondary flakes, and thinning flakes.

Primary and secondary flakes, along with cortical removal flakes, are a product of percussion flaking undertaken during the initial reduction phases of raw material into blanks, bifaces and

preforms. These early-stage reduction flakes tend to exhibit minimal dorsal flake scarring, and are often characterized by the presence of cortex, or the original unflaked chert exterior, on their dorsal surfaces and proximal ends. For cortical removal flakes, over half of the dorsal surface comprises cortex; for primary flakes, less than half. Secondary flakes, meanwhile, may not contain any cortex. Thinning flakes are produced during the latter stages of lithic reduction, when blanks, bifaces, and preforms are shaped into projectile points and formal tools. They are the result of pressure flaking, where the maker uses a softer material such as antler, wood or bone to apply direct pressure onto a specific part of the tool. Pressure flaking generally produces smaller, thinner flakes than does percussion flaking. Thinning flakes also exhibit more flake scars on their dorsal surface than do primary or secondary flakes. Fragmentary flakes are flakes that may have some identifiable flake characteristic, but cannot be classified with certainty into a specific category.

3.1.2 Euro-Canadian Artifacts

All Euro-Canadian ceramic sherds were examined in order to describe the function of the item from which the ceramic sherd originated. However, for those sherds that were too fragmentary for a functional assignment, an attempt was made to at least provide a formal description, such as to which portion of an item the sherd belonged. For example, what used to be a porcelain teacup but now found in an archaeological context could be classified archaeologically in the artifact catalogue in a descending order of specificity depending on preservation and artifact size: a teacup (function), a cup (function), a hollowware (form), or a rim fragment (form). Flatware was differentiated based on the absence of curvature in the ceramic cross-section of each sherd. The classification system used here is based upon Beaudoin (2013:78-82). If Beaudoin's classifications could not be applied, then the broader definitions of Voss (2008:209) were used. Ultimately, if sherds were small enough that even a general functional or formal ware type could not be determined, then the sherd was simply classified as a rim fragment, a non-rim fragment, a base fragment, or indeterminate.

3.2 Cluster H1 (AiHc-545; Find Spots 1-27)

The Stage 2 assessment of Cluster H1 (AiHc-545) produced 208 Euro-Canadian artifacts (Table 5) from 27 positive test pits scattered across an area of 56m by 37m. A sample of the artifacts recovered from the Stage 2 assessment is depicted in Section 9.2 of this report (Plates 1-13). Table 5 summarizes the artifact categories represented at this site. In summary, artifacts found at AiHc-545 are dominated by ceramic fragments (n=105; 50.48%) and structural artifacts (n=80; 38.46%) with lesser numbers of artifacts classified as miscellaneous metal (n=11), household (n=9) and personal (n=3).

Table 5: AiHc-545 Artifact Summary

Artifacts	Freq.	%
Ceramics	105	50.48
Household	9	4.33
Personal	3	1.44
Structural	80	38.46
Miscellaneous metal	11	5.29
Total	**208**	**100**

3.2.1 Ceramics (see Appendix 10.1.1)

Over 50% of the Stage 2 assemblage were ceramic pieces (n=105). Most of these were pieces of refined white earthenware ('RWE'; 60%; n=63) and red earthenware (27.62%; n=29). Additionally, five ironstone, four Jackfield-type ware and four pearlware sherds were also represented in the ceramic assemblage. Table 6 provides a summary of ceramic assemblage by ware type and

Table **7**, by surface decoration technique.

Table 6: Ceramic Assemblage by Ware Type (see Appendix 10.3.1)

Ceramics	Freq.	%
ironstone	5	4.76
Jackfield-type ware	4	3.81
pearlware	4	3.81
red earthenware	29	27.62
RWE	63	60.00
Totals	**105**	**100**

Table 7: Ceramic Assemblage by Decorative Style (see Appendix 10.1.2)

Ceramics	Freq.	%
ironstone, flow transfer printed	1	0.95
ironstone, transfer printed	1	0.95
ironstone, undecorated	3	2.86
Jackfield-type ware	4	3.81
pearlware, undecorated	4	3.81
red earthenware	29	27.62
RWE, banded	1	0.95
RWE, edged, scalloped	1	0.95
RWE, flow transfer printed	1	0.95
RWE, painted	6	5.71
RWE, transfer printed	7	6.67
RWE, undecorated	47	44.76
Totals	**105**	**100**

The ceramic assemblage is dominated by undecorated RWE at 44.76% and undecorated red earthenware pieces at 27.62%. The decorated RWE assemblage is highly diverse and includes one banded (grey and blue colour bands), one edged (painted blue and scalloped), one flow blue transfer printed, six painted and seven transfer printed pieces. RWE painted pieces include three late palette and three new palette blue. RWE transfer printed pieces include five with blue, one brown and one mulberry colours. All four of the pearlware pieces are undecorated. Of the five ironstone pieces, three are undecorated, one has transfer print in green and one has flow transfer print in mulberry.

The diversity of ware types and decorative styles provides evidence of site use spanning the early to late 19th century. The presence of pearlware, Jackfield-type ware and scalloped edge ware provide evidence of early 19th century site use while late palette painted, transfer printed and flow transfer printed pieces are suggestive of mid-to-late 19th century occupations.

Within the Stage 2 ceramic assemblage 10 fragments are flatware, 88 are flatware and seven are unknown (Table 8). Almost all the ceramic fragments were too small to determine function (n=101; 96.19%). Otherwise, the ceramic assemblage includes three tea cup handle fragments and one bowl fragment.

Table 8: Ceramic Assemblage by Form

Ceramics	Flat	Hollow	Indeterminate
ironstone, flow transfer printed	1		
ironstone, transfer printed	1		
ironstone, undecorated		3	
Jackfield-type ware		4	
pearlware, undecorated	2	2	
red earthenware		29	
RWE, banded		1	
RWE, edged, scalloped	1		
RWE, flow transfer printed		1	
RWE, painted		6	
RWE, transfer printed	1	5	1
RWE, undecorated	4	37	6
Totals	**10**	**88**	**7**

3.2.2 Household Artifacts (see Appendix 10.1.3)

A total of nine household artifacts were observed within the Stage 2 assemblage. Household artifacts included two faunal remains, six glass bottle fragments and a fragment of a glass decanter.

3.2.3 Structural Artifacts (see Appendix 10.1.5)

Structural artifacts identified within the assemblage include small red brick fragments (n=24), nails (n=45) and window glass fragments (n=11; Table 9). Window glass fragments vary in thickness and include nine thicker and only two thinner than 1.6mm. The dominance of window glass with a thickness over 1.6mm is suggestive of a post-1845 occupation, however given the sample size a definitive date range cannot be determined.

Of the 24 nails identified by the Stage 2 assessment; 13 are wrought, 19 are cut and 13 are wire drawn nails. The near equal mixture of wrought, cut and wire drawn nails is suggestive of a long period of occupation nearly spanning the 19th century.

Table 9: Structural Artifacts

Ceramics	Freq.	%
brick	24	30
nail, cut	19	23.75
nail, wire drawn	13	16.25
nail, wrought	13	16.25
window glass	11	13.75
Totals	80	100

3.2.4 Personal Artifacts (see Appendix 10.1.4)

Only three personal artifacts were identified during the Stage 2 assessment of Cluster H1 (AiHc-545). These artifacts include a simple brass button with a loop shank, a white clay pipe stem fragment and a white clay pipe bowl fragment. The pipe stem fragment was not stamped; therefore, it is unclear when the pipe was manufactured.

3.2.5 Miscellaneous Metal Artifacts

Miscellaneous metal artifacts documented at Cluster H1 (AiHc-545) include ten unidentifiable corroded ferrous metal pieces and a steel hinge. None of these artifacts are temporally diagnostic.

3.2.6 Artifact Catalogue

See Table 10 below for the complete catalogue of artifacts recovered during the Stage 2 assessment at Cluster H1 (AiHc-545).

Table 10: Cluster H1 (AiHc-545) Stage 2 Artifact Catalogue

CAT#	Cluster	Find Spot	Artifact	Freq.	Depth (m)	Ceramic Form	Ceramic Function	Colour	Comments
1	H1	1	metal, undetermined	1	0.36				
2	H1	1	nail, wrought	1	0.36				
3	H1	1	window glass	2	0.36				≥ 1.6mm
4	H1	2	nail, cut	1	0.34				
5	H1	3	glass, bottle	1	0.33			olive-green	
6	H1	4	pearlware, undecorated	1	0.3	flat	indeterminate		
7	H1	5	RWE, edged, scalloped	1	0.3	flat	indeterminate	blue	
8	H1	5	brick	6	0.3			red	
9	H1	5	pearlware, undecorated	1	0.3	flat	indeterminate		
10	H1	5	nail, wrought	1	0.3				
11	H1	6	red earthenware	1	0.31	hollow	indeterminate		unglazed
12	H1	6	RWE, painted	2	0.31	hollow	indeterminate	blue	new palette blue
13	H1	6	RWE, undecorated	1	0.31	hollow	indeterminate		
14	H1	6	window glass	1	0.31				≥ 1.6mm
15	H1	6	Jackfield-type ware	1	0.31	hollow	indeterminate	black	
16	H1	7	white clay pipe stem	1	0.29				
17	H1	7	brick	1	0.29			red	
18	H1	7	RWE, painted	1	0.29	hollow	indeterminate	blue	new palette blue
19	H1	7	RWE, undecorated	1	0.29	hollow	indeterminate		
20	H1	8	red earthenware	1	0.32	hollow	indeterminate		glazed
21	H1	8	brick	4	0.32			red	
22	H1	8	nail, wrought	1	0.32				
23	H1	8	nail, cut	1	0.32				
24	H1	8	RWE, undecorated	5	0.32	hollow	indeterminate		
25	H1	8	RWE, undecorated	2	0.32	flat	indeterminate		
26	H1	8	button, brass	1	0.32				loop shank
27	H1	8	window glass	1	0.32				≥ 1.6mm
28	H1	9	nail, wrought	1	0.3				
29	H1	9	RWE, undecorated	3	0.3	hollow	indeterminate		
30	H1	10	nail, wire drawn	1	0.29				
31	H1	10	glass, decanter	1	0.29			green	
32	H1	10	nail, cut	2	0.29				
33	H1	10	red earthenware	1	0.29	hollow	indeterminate		glazed
34	H1	10	RWE, undecorated	2	0.29	hollow	indeterminate		
35	H1	11	RWE, undecorated	2	0.31	hollow	indeterminate		
36	H1	11	red earthenware	1	0.31	hollow	indeterminate		unglazed
37	H1	12	brick	2	0.29			red	

CAT#	Cluster	Find Spot	Artifact	Freq.	Depth (m)	Ceramic Form	Ceramic Function	Colour	Comments
38	H1	12	red earthenware	1	0.29	hollow	indeterminate		glazed
39	H1	12	RWE, undecorated	3	0.29	hollow	indeterminate		
40	H1	12	RWE, undecorated	2	0.29	indeterminate	indeterminate		
41	H1	12	RWE, painted	1	0.29	hollow	indeterminate	green	late palette painted
42	H1	12	nail, cut	1	0.29				
43	H1	13	brick	6	0.31			red	
44	H1	13	nail, wrought	3	0.31				
45	H1	13	nail, cut	2	0.31				
46	H1	13	faunal remains, mammalian	1	0.31				
47	H1	13	Jackfield-type ware	1	0.31	hollow	indeterminate	black	
48	H1	13	red earthenware	2	0.31	hollow	indeterminate		glazed
49	H1	13	red earthenware	1	0.31	hollow	indeterminate		unglazed
50	H1	13	red earthenware	8	0.31	hollow	indeterminate		exfoliated
51	H1	13	window glass	1	0.31				≥ 1.6mm
52	H1	13	window glass	1	0.31				< 1.6mm
53	H1	13	white clay pipe bowl	1	0.31				
54	H1	13	RWE, transfer printed	1	0.31	flat	indeterminate	brown	
55	H1	13	RWE, transfer printed	2	0.31	hollow	indeterminate	blue	
56	H1	13	RWE, flow transfer printed	1	0.31	hollow	indeterminate	blue	
57	H1	13	pearlware, undecorated	1	0.31	hollow	indeterminate		
58	H1	13	RWE, painted	1	0.31	hollow	indeterminate	green	late palette painted
59	H1	13	RWE, undecorated	3	0.31	hollow	indeterminate		
60	H1	13	RWE, undecorated	1	0.31	flat	indeterminate		
61	H1	13	RWE, undecorated	2	0.31	indeterminate	indeterminate		
62	H1	13	metal, hinge	1	0.31				door type
63	H1	14	nail, cut	1	0.3				
64	H1	14	red earthenware	1	0.3	hollow	indeterminate		glazed
65	H1	15	Jackfield-type ware	2	0.27	hollow	indeterminate	black	
66	H1	15	RWE, transfer printed	1	0.27	hollow	indeterminate	blue	
67	H1	15	RWE, undecorated	6	0.27	hollow	indeterminate		
68	H1	15	window glass	1	0.27				≥ 1.6mm
69	H1	15	window glass	1	0.27				< 1.6mm
70	H1	15	nail, wrought	2	0.27				
71	H1	15	red earthenware	2	0.27	hollow	indeterminate		glazed
72	H1	15	red earthenware	2	0.27	hollow	indeterminate		unglazed
73	H1	15	brick	1	0.27			red	
74	H1	16	ironstone, transfer printed	1	0.3	flat	indeterminate	green	
75	H1	16	RWE, undecorated	2	0.3	indeterminate	indeterminate		

CAT#	Cluster	Find Spot	Artifact	Freq.	Depth (m)	Ceramic Form	Ceramic Function	Colour	Comments
76	H1	16	nail, cut	1	0.3				
77	H1	16	glass, bottle	1	0.3			clear	
78	H1	17	metal, undetermined	1	0.3				
79	H1	17	RWE, painted	1	0.3	hollow	indeterminate	green	late palette painted
80	H1	17	RWE, undecorated	4	0.3	hollow	indeterminate		
81	H1	18	nail, wrought	1	0.29				
82	H1	18	RWE, undecorated	2	0.29	hollow	indeterminate		
83	H1	18	red earthenware	3	0.29	hollow	indeterminate		unglazed
84	H1	19	pearlware, undecorated	1	0.28	hollow	indeterminate		
85	H1	19	nail, wrought	1	0.28				
86	H1	20	nail, cut	1	0.29				
87	H1	21	ironstone, flow transfer printed	1	0.31	flat	indeterminate	mulberry	
88	H1	21	RWE, transfer printed	1	0.31	hollow	indeterminate	blue	
89	H1	21	RWE, undecorated	4	0.31	hollow	indeterminate		
90	H1	22	brick	4	0.3			red	
91	H1	22	red earthenware	1	0.3	hollow	indeterminate		glazed
92	H1	22	red earthenware	1	0.3	hollow	indeterminate		exfoliated
93	H1	22	metal, undetermined	2	0.3				
94	H1	22	RWE, transfer printed	1	0.3	indeterminate	indeterminate	blue	
95	H1	22	RWE, undecorated	1	0.3	hollow	indeterminate		
96	H1	22	faunal remains, mammalian	1	0.3				
97	H1	22	nail, wire drawn	1	0.3				
98	H1	22	nail, cut	1	0.3				
99	H1	23	glass, bottle	3	0.5			clear	
100	H1	23	window glass	2	0.5				≥ 1.6mm
101	H1	23	nail, cut	6	0.5				
102	H1	23	nail, wire drawn	9	0.5				
103	H1	23	metal, undetermined	5	0.5				
104	H1	23	ironstone, undecorated	3	0.5	hollow	tea cup handle		
105	H1	24	nail, wire drawn	2	0.5				
106	H1	24	metal, undetermined	1	0.5				
107	H1	24	red earthenware	2	0.5	hollow	indeterminate		glazed
108	H1	24	window glass	1	0.5				≥ 1.6mm
109	H1	25	nail, cut	2	0.55				
110	H1	26	red earthenware	1	0.5	hollow	bowl		unglazed
111	H1	26	RWE, undecorated	1	0.5	flat	indeterminate		
112	H1	26	RWE, banded	1	0.5	hollow	indeterminate	grey, blue	

CAT#	Cluster	Find Spot	Artifact	Freq.	Depth (m)	Ceramic Form	Ceramic Function	Colour	Comments
113	H1	26	nail, wrought	2	0.5				
114	H1	26	glass, bottle	1	0.5			clear	
115	H1	27	RWE, transfer printed	1	0.22	hollow	indeterminate	mulberry	

3.3 Find Spot 28

The Stage 2 pedestrian survey of Find Spot 28 resulted in the documentation of a single secondary flake manufactured from Haldimand chert (Plate 14). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 28.

Table 11: Find Spot 28 Stage 2 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Morphology	Comments
116	28	debitage	1	Haldimand	primary	

3.4 Find Spot 29

The Stage 2 pedestrian survey of Find Spot 29 resulted in the documentation of a single primary flake manufactured from Haldimand chert (Plate 15). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 29.

Table 12: Find Spot 29 Stage 2 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Morphology	Comments
117	29	debitage	1	Haldimand	secondary	

3.5 Cluster H2 (AiHc-546; Find Spots 30-41)

The Stage 2 pedestrian survey of Cluster H2 (AiHc-546) identified a total of 12 artifacts including five glass bottle fragments, five pieces of undecorated ironstone (all with evidence of surface burning), one piece of moulded ironstone and one piece of window glass (Plate 16). Artifacts at AiHc-546 were found spread over an area measuring about 11m by 14m. A single piece of window glass was recovered, which measures greater than 1.6mm thick. The five glass bottle fragments include portions of olive-green, clear and green coloured bottles. All six ironstone fragments were derived from hollowware and none were complete enough to determine ceramic function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at AiHc-546.

Table 13: Cluster H2 (AiHc-546) Stage 2 Artifact Catalogue

CAT#	Cluster	Find Spot	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
118	H2	30	glass, bottle	1			olive-green	
119	H2	31	ironstone, undecorated	1	hollow	indeterminate		surface burning
120	H2	32	ironstone, undecorated	1	hollow	indeterminate		surface burning
121	H2	33	glass, bottle	1			green	
122	H2	34	glass, bottle	1			clear	
123	H2	35	window glass	1				≥ 1.6mm
124	H2	36	ironstone, undecorated	1	hollow	indeterminate		surface burning
125	H2	37	glass, bottle	1			green	
126	H2	38	ironstone, undecorated	1	hollow	indeterminate		surface burning
127	H2	39	ironstone, moulded	1	hollow	indeterminate		
128	H2	40	glass, bottle	1			green	
129	H2	41	ironstone, undecorated	1	hollow	indeterminate		surface burning

3.6 Find Spot 42 (AiHc-549)

The Stage 2 pedestrian survey of Find Spot 42 (AiHc-549) yielded a side-notched projectile point made of Onondaga chert (Plate 17). The point closely matches the attributes of a Brewerton Side-Notched point dating to the Middle Archaic period (3000-2500 BCE). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function other than the point was likely manufactured during the Middle Archaic and possibly represents an incidental loss during a hunt.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 42.

Table 14: Find Spot 42 (AiHc-549) Stage 2 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Comments	Metrics
130	42	projectile point	1	Onondaga	Brewerton Side-Notched type; missing tip	36mm length 29mm width 5mm depth 13mm hafting 27mm base 17mm neck

3.7 Find Spot 43

The Stage 2 pedestrian survey of Find Spot 43 resulted in the identification of a side-scraper made from Onondaga chert (Plate 18). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 43.

Table 15: Find Spot 43 Stage 2 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Comments	Metrics
131	43	side scraper	1	Onondaga	Side scraper with retouch along lateral margins	60mm length 40mm width 7mm depth

3.8 Find Spot 44

The Stage 2 pedestrian survey of Find Spot 44 resulted in the identification of an isolated secondary flake made of Onondaga chert (Plate 19). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 44.

Table 16: Find Spot 44 Stage 2 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Morphology	Comments
132	44	debitage	1	Onondaga	secondary	

3.9 Cluster P1 (AiHc-548; Find Spots 45-47)

The Stage 2 pedestrian survey of Cluster P1 (AiHc-548) recovered a side-notched projectile point made of Onondaga chert, one primary flake made of Onondaga chert and one secondary flake made of Onondaga chert (Plates 20-22) within a 1m x 11m area. The projectile point most closely matches the attributes of a Brewerton Side-Notched projectile point type dating to the Middle Archaic (3000-2500BCE). Given the paucity of artifacts present at this site it is difficult to draw

any useful conclusions regarding site function other than the site was likely occupied during the Middle Archaic and possibly represents an incidental loss during a hunt.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at AiHc-548.

Table 17: Cluster P1 (AiHc-548) Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Morphology	Comments	Metrics
133	45	debitage	1	Onondaga	primary	hinge fracture	
134	46	projectile point	1	Onondaga		Brewerton Side-notched type	43mm length 28mm width 8mm depth 18 mm neck
135	47	debitage	1	Onondaga	secondary		

3.10 Find Spot 48

The Stage 2 pedestrian survey of Find Spot 48 identified a single secondary flake made of Onondaga chert (plate 23). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 48.

Table 18: Find Spot 48 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Morphology	Comments
136	48	debitage	1	Onondaga	secondary	

3.11 Find Spot 49 (AiHc-550)

The Stage 2 pedestrian survey of Find Spot 49 recovered a single corner-notched ovate projectile point made of Onondaga chert (Plate 24). Although the point is missing most of the base, it most closely matches the attributes of a Brewerton Corner notched type point known to date during the Middle Archaic period (3500-2500BCE). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function other than the point was likely made during the Middle Woodland and possibly represents an incidental loss during a hunt.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at AiHc-550.

Table 19: Find Spot 49 (AiHc-550) Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Comments	Metrics
137	49	projectile point	1	Onondaga	ovate point with corner-notching; missing tip and most of the base; probable Brewerton Side notched point	35mm length 27mm width 5mm depth 16mm neck

3.12 Find Spot 50 (AiHc-551)

The Stage 2 pedestrian survey of Find Spot 50 (AiHc-551) recovered a single projectile point with made of Onondaga chert (Plate 25). Although the point is missing most of the base, it most closely matches the attributes of a Meadowood type projectile point known to date during the Early Woodland (1000-500BCE). Given the isolated nature of this artifact it is difficult to draw any

useful conclusions regarding site function other than the point was likely made during the Early Woodland and possibly represents an incidental loss during a hunt.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at AiHc-551.

Table 20: Find Spot 50 (AiHc-551) Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Comments	Metrics
138	50	projectile point	1	Onondaga	narrow, triangular point with shallow notching; probable Meadowood type point	48mm length 21mm width 6mm depth 13mm neck

3.13 Cluster H3 (AiHc-547; Find Spots 51-59)

The Stage 2 pedestrian survey of Cluster H3 (AiHc-547) identified a total of nine Euro-Canadian artifacts scattered within an area measuring 9m by 10m. Artifacts present include two glass bottle fragments, two ironstone fragments, two porcelain fragments and three pieces of RWE (Plates 26-28). Glass bottle fragments include pieces from clear and aqua coloured bottles. Both ironstone fragments are undecorated while one fragment likely represents a fragment of a plate. The three RWE pieces are all undecorated and are too small for identification according to ceramic function. Lastly, the two porcelain pieces include one painted ornate cup handle and one piece of polychrome decal printed hollowware.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at AiHc-547.

Table 21: Cluster H3 (AiHc-547) Artifact Catalogue

CAT#	Custer	Find Spot	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
139	H3	51	porcelain, decal printed	1	hollow	indeterminate	pink, green, red	
140	H3	52	RWE, undecorated	1	indeterminate	indeterminate		
141	H3	53	RWE, undecorated	1	indeterminate	indeterminate		
142	H3	54	ironstone, undecorated	1	indeterminate	indeterminate		
143	H3	55	porcelain, painted	1	hollow	cup handle	blue	ornate handle
144	H3	56	ironstone, undecorated	1	flat	plate		
145	H3	57	RWE, undecorated	1	indeterminate	indeterminate		
146	H3	58	glass, bottle	1			clear	
147	H3	59	glass, bottle	1			aqua	

3.14 Find Spot 60

The Stage 2 pedestrian survey of Find Spot 60 recovered a single secondary flake made of Onondaga chert (Plate 29). Given the isolated nature of this artifact it is difficult to draw any useful conclusions regarding site function.

See the following table for the complete catalogue of artifacts recovered during the Stage 2 assessment at Find Spot 60.

Table 22: Find Spot 60 Artifact Catalogue

CAT#	Find Spot	Artifact	Freq.	Chert Type	Morphology	Comments
148	60	debitage	1	Onondaga	secondary	

4.0 Analysis and Conclusions

Detritus Consulting Ltd. ('Detritus') was retained by Shawn Milloy and Gateman Milloy ('the Proponent') to conduct a Stage 1-2 archaeological assessment on Part of Lots 27 and 28, Concession 12, Geographic Township of North Dumfries, Region of Waterloo, Ontario (Figure 1). This investigation was conducted in advance of the proposed Tullis Whistle Bare Aggregates Pit development (the 'Study Area') encompassing the agricultural properties located between 1821 and 1835 Whistle Bare Road.

The Stage 1 background research indicated that the entire Study Area exhibited high potential for the identification and recovery of archaeological resources. The Stage 2 assessment was conducted between November 12, 2020 and September 30, 2021 under the license P017 issued to Garth Grimes by the MHTSCI. Fieldwork consisted of a typical pedestrian survey of the agricultural land that covered most of the Study Area and a typical test pit survey of the manicured lawn, overgrown grassy areas and woodlot that were inaccessible for ploughing. The existing structures, demolished structures, boulder pile, and all gravel surfaces throughout the Study Area were determined to have been previously disturbed and were photo documented only. The Study Area also permanently wet areas (two ponds and a wetland), which were evaluated as having no potential based on the Stage 2 identification of physical features of no or low archaeological potential, as per Section 2.1, Standard 2a of the *Standards and Guidelines* (Government of Ontario 2011). These permanently wet areas were mapped and photo documented only.

The Stage 2 archaeological assessment of the Study Area resulted in the documentation of a total of 60 Find Spots including three clusters of Euro-Canadian artifacts (Clusters H1, H2 and H3), one cluster of pre-contact Aboriginal artifacts (Cluster P1), three isolated diagnostic projectile points (Find Spot 42, Find Spot 49 and Find Spot 50) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60).

The Stage 2 test pit survey of Cluster H1 (AiHc-545) produced 208 Euro-Canadian artifacts from 27 positive test pits scattered across an area of 56m by 37m. In summary, artifacts found at AiHc-545 are dominated by ceramic fragments (n=105; 50.48%) and structural artifacts (n=80; 38.46%) with lesser numbers of artifacts classified as miscellaneous metal (n=11), household (n=9) and personal (n=3). The diversity of ware types and decorative styles at AiHc-545 provides evidence of site use spanning the early to late 19th century. The presence of pearlware, Jackfield-type ware and scalloped edge ware provide evidence of early 19th century site use while late palette painted, transfer printed and flow transfer printed pieces are suggestive of mid-to-late 19th century occupations. Based on these results, AiHc-545 has been interpreted as a medium-sized, 19th century domestic deposit.

The Stage 2 pedestrian survey of Cluster H2 (AiHc-546) identified a total of 12 artifacts including five glass bottle fragments, five pieces of undecorated ironstone (all with evidence of surface burning), one piece of moulded ironstone and one piece of window glass. Artifacts at AiHc-546 were found spread over an area measuring about 11m by 14m. Based on these results, AiHc-546 has been interpreted as a sparse scatter of late-19th to early 20th century domestic refuse. Given the paucity of artifacts it is difficult to draw any further conclusions regarding site function.

The Stage 2 pedestrian survey of Cluster P1 (AiHc-548) recovered a side-notched projectile point made of Onondaga chert, one primary flake made of Onondaga chert and one secondary flake made of Onondaga chert. The projectile point most closely matches the attributes of a Brewerton Side-Notched projectile point type dating to the Middle Archaic (3000-2500BCE). Based on the results of the Stage 2 assessment, AiHc-548 has been interpreted as a small activity area occupied by unspecified Aboriginal people during the Middle Archaic.

The Stage 2 pedestrian survey of Cluster H3 (AiHc-547) identified a total of nine Euro-Canadian artifacts scattered within an area measuring 9m by 10m. Artifacts present include two glass bottle fragments, two undecorated ironstone fragments, two porcelain fragments and three pieces of undecorated RWE. Glass bottle fragments include pieces from clear and aqua coloured bottles. Based on the presence of RWE, decal printed porcelain, and ironstone, AiHc-547 has been

interpreted as a small scatter of late-19th to early 20th century domestic refuse. Given the paucity of artifacts it is difficult to draw any further conclusions regarding site function.

The Stage 2 pedestrian survey identified three isolated diagnostic projectile points (Find Spot 42 [AiHc-549], Find Spot 49 [AiHc-550] and Find Spot 50 [AiHc-551]) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60). Given the isolated nature of these artifacts it is difficult to draw any further conclusions regarding site function.

4.1 Preliminary Indication of Sites Possibly Requiring Stage 4 Mitigation of Developmental Impacts

Based on the results of the Stage 2 assessment presented above, Cluster H1 (AiHc-545) and Cluster P1 (AiHc-548) were determined to retain CHVI and are recommended for Stage 3 archaeological assessment (see below). Furthermore, the Stage 2 assessment resulted in the recommendation that Cluster H2 (AiHc-546), Cluster H3 (AiHc-547) and the seven isolated pre-contact Aboriginal artifacts found at Find Spot 42 (AiHc-549), Find Spot 43, Find Spot 44, Find Spot 48, Find Spot 49 (AiHc-550), Find Spot 50 (AiHc-551) and Find Spot 60 retains no further CHVI, and are not recommended for Stage 3 assessment.

A preliminary indication of whether the identified sites could be eventually recommended for Stage 4 archaeological mitigation is required under Section 7.8.3, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011a). Although Cluster H1 (AiHc-545) and Cluster P1 (AiHc-548) meet the criteria for Stage 3 assessments, it is not yet clear whether a Stage 4 mitigation will be recommended. No firm recommendation for, or against, Stage 4 Mitigation of Developmental Impacts will be made at any of the sites documented during the current Stage 2 assessment until the forthcoming Stage 3 archaeological assessment has been conducted.

5.0 Recommendations

5.1 Cluster H1 (AiHc-545)

The Stage 2 test pit survey of Cluster H1 (AiHc-545) produced 208 Euro-Canadian artifacts from 27 positive test pits scattered across an area of 56m by 37m. Given the presence of at least 20 artifacts that date the period of use to before 1900, Cluster H1 (AiHc-545) meets the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011), and therefore retains CHVI. **Therefore, a Stage 3 archaeological assessment is recommended for AiHc-545 and retains CHVI.**

AiHc-545 though located within the Study Area is within an area not proposed for development (aggregates extraction).

Given that AiHc-545 was discovered outside the area proposed for development, the Proponent has elected to avoid and protect this site, as per Section 4.1 of the *Standards and Guidelines* (Government of Ontario 2011).

To meet the requirements for avoidance during construction, as outlined in Section 4.1.1 of the *Standards and Guidelines* (Government of Ontario 2011), it is recommended that **temporary fencing be installed around AiHc-545 and its protective buffer, and that construction activities within the 20m – 70m monitoring buffer be monitored by a licensed archaeological consultant in order to prevent any impacts to the site** (see below). If in the future AiHc-545 will be impacted by development, and no Stage 3 assessment is to be conducted at that time, the archaeological site and its protective buffer must be avoided and no construction impacts will be allowed. This protective buffer will extend 20m beyond the limits of the site, as documented during the Stage 2 assessment (see Tile 4 of the Supplementary Documentation). 'No-go' instructions will be issued to all on-site construction crews, engineers, architects and any others involved in day-to-day decisions during construction. The location of the area to be avoided will be marked on all contract drawings, where applicable, and will include explicit instructions to avoid this area.

Furthermore, a construction monitoring zone ranging from 20 metres to 70 metres from the boundaries of the sites on all sides will also be observed. A licensed archaeologist will be required to monitor any construction activities impacting these zones in order to prevent any construction impacts outside of the amended Study Area. According to Section 4.1.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), construction monitoring is required during all grading and other soil disturbing activities to verify the effectiveness of the avoidance strategies.

As per Section 7.9.9, Standard 1b of the *Standards and Guidelines* (Government of Ontario 2011), this letter from the proponent confirming that the avoidance measures outlined above will be implemented during construction is provided here in the Supplementary Documentation to this report. This letter also includes a construction monitoring schedule for all ground disturbance activity in the vicinity of the site and its protective buffer.

In order to meet the requirements for long term protection, as outlined in 4.1.4 of the *Standards and Guidelines* (Government of Ontario 2011), the Proponent will have **AiHc-545 and its protective buffer** mapped by an Ontario Land Surveyor (OLS) onto a topographic plan. A restrictive covenant will be registered on title that refers to the plan prepared by the OLS. This covenant will prohibit any activities that might alter **AiHc-545** and their protective buffers in any way, either temporarily or permanently. As per Section 4.1.4, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), such activities include, but are not limited to, tree removal, minor landscaping, or utilities installation.

Should avoidance and protection not be feasible, stage 3 assessment should take place.

The Stage 3 assessments of AiHc-545 will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Typically, a Stage 3 assessment for a site documented during a pedestrian survey of ploughed agricultural land begins with an intensive

controlled surface pickup ('CSP') across the Stage 2 limits of site. AiHc-545 was identified during a test pit survey of a manicured lawn and overgrown grassy areas; therefore, the Stage 3 assessment of the site will consist of test unit excavation only, conducted as per Section 3.2.2 of the *Standards and Guidelines* (Government of Ontario 2011).

Because it is not yet evident if the level of CHVI at AiHc-545 will result in a recommendation to proceed to Stage 4 (see Section 4.3 above), the Stage 3 assessment at the site will consist of the hand excavation of 1m square test units across its Stage 2 limits, as per Table 3.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). Additional 1m test units, amounting to 20% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding site and grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

5.2 Cluster H2 (AiHc-546)

Given that the Stage 2 assessment of Cluster H2 (AiHc-546) produced only 12 Euro-Canadian artifacts dating from the late 19th century through the early 20th century, AiHc-546 does not meet the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011). **Therefore, a Stage 3 archaeological assessment is not recommended for AiHc-546 and it does not retain any further CHVI.**

5.3 Cluster H3 (AiHc-547)

Given that the Stage 2 assessment of Cluster H3 (AiHc-547) produced only nine Euro-Canadian artifacts dating from the late 19th century through the early 20th century, AiHc-547 does not meet the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011). **A Stage 3 archaeological assessment is not recommended for AiHc-547 and it does not retain any further CHVI.**

5.4 Cluster P1 (AiHc-548)

The Stage 2 assessment of Cluster P1 (AiHc-548) identified a total of two flakes and one temporally diagnostic projectile point. AiHc-548 though located within the Study Area is within an area not proposed for development (aggregates extraction).

Given the presence of at least 20 artifacts that date the period of use to before 1900, Cluster P1 (AiHc-548) meets the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011), and therefore retains CHVI. **Therefore, a Stage 3 archaeological assessment is recommended for AiHc-548 and retains CHVI.**

Given that AiHc-548 was discovered outside the area proposed for development, the Proponent has elected to avoid and protect this site, as per Section 4.1 of the *Standards and Guidelines* (Government of Ontario 2011).

To meet the requirements for avoidance during construction, as outlined in Section 4.1.1 of the *Standards and Guidelines* (Government of Ontario 2011), it is recommended that **temporary fencing be installed around AiHc-548 and its protective buffer, and that construction activities within the 20m – 70m monitoring buffer be monitored by a licensed archaeological consultant in order to prevent any impacts to the site** (see below). If in the future AiHc-548 will be impacted by development, and no Stage 3 assessment is to be conducted at that time, the archaeological site and its protective buffer must be avoided and no construction impacts will be allowed. This protective buffer will extend 20m beyond the limits

of the site, as documented during the Stage 2 assessment (see Tile 4 of the Supplementary Documentation). 'No-go' instructions will be issued to all on-site construction crews, engineers, architects and any others involved in day-to-day decisions during construction. The location of the area to be avoided will be marked on all contract drawings, where applicable, and will include explicit instructions to avoid this area.

Furthermore, a construction monitoring zone ranging from 20 metres to 70 metres from the boundaries of the sites on all sides will also be observed. A licensed archaeologist will be required to monitor any construction activities impacting these zones in order to prevent any construction impacts outside of the amended Study Area. According to Section 4.1.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), construction monitoring is required during all grading and other soil disturbing activities to verify the effectiveness of the avoidance strategies.

As per Section 7.9.9, Standard 1b of the *Standards and Guidelines* (Government of Ontario 2011), this letter from the proponent confirming that the avoidance measures outlined above will be implemented during construction is provided here in the Supplementary Documentation to this report. This letter also includes a construction monitoring schedule for all ground disturbance activity in the vicinity of the site and its protective buffer.

In order to meet the requirements for long term protection, as outlined in 4.1.4 of the *Standards and Guidelines* (Government of Ontario 2011), the Proponent will have **AiHc-548 and its protective buffer** mapped by an Ontario Land Surveyor (OLS) onto a topographic plan. A restrictive covenant will be registered on title that refers to the plan prepared by the OLS. This covenant will prohibit any activities that might alter **AiHc-548** and its protective buffer in any way, either temporarily or permanently. As per Section 4.1.4, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011b), such activities include, but are not limited to, tree removal, minor landscaping, or utilities installation.

Should avoidance and protection not be feasible, stage 3 assessment should take place.

The Stage 3 assessments of AiHc-548 will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Typically, a Stage 3 assessment for a site documented during a pedestrian survey of ploughed agricultural land begins with an intensive controlled surface pickup ('CSP') across the Stage 2 limits of site. During the Stage 2 pedestrian survey at AiHc-548 all the artifact findspots were point-plotted and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP at the sites were met during the Stage 2 assessment. Because it is not yet evident if the level of CHVI at AiHc-548 will result in a recommendation to proceed to Stage 4, the Stage 3 assessment at the site will consist of the hand excavation of 1m square test units across its Stage 2 limits, as per Table 3.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). Additional 1m test units, amounting to 20% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding site and grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

5.5 Isolated Pre-Contact Aboriginal Artifacts

The Stage 2 assessment identified three diagnostic projectile points (Find Spot 42 [AiHc-549], Find Spot 49 [AiHc-550] and Find Spot 50 [AiHc-551]) and four isolated pre-contact Aboriginal artifacts (Find Spot 43, Find Spot 44, Find Spot 48 and Find Spot 60). None of the seven isolated find spots documented throughout the Study Area meet any of the criteria for additional assessment listed in Section 2.2, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011a). **Therefore, the seven isolated findspots (Find Spot 42 [AiHc-549], Find Spot 43, Find Spot 44, Find Spot 48, Find Spot 49 [AiHc-550], Find Spot 50 [AiHc-**

551] and Find Spot 60) retain no further CHVI, and are not recommended for Stage 3 assessment.

6.0 Advice on Compliance with Legislation

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest , and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological license.

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8.0 Maps

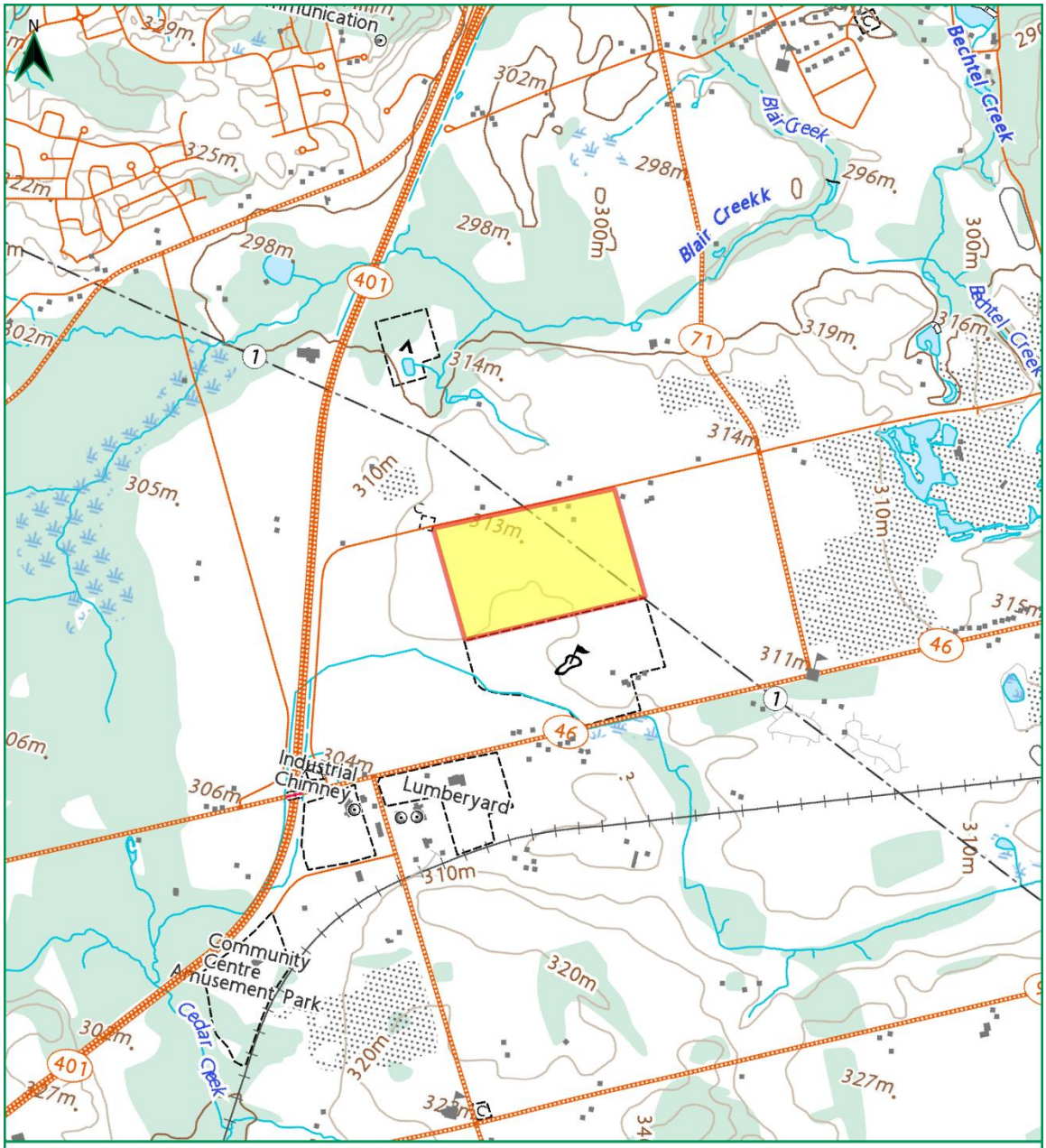


Figure 1: Study Area

Map Creator: Jonathan M. Peart
CRS: WGS 84 NAD 17N
Baselayer: Natural Resources Canada. The Atlas of Canada - Toporama, 2017. Electronic source http://atlas.gc.ca/toporama/en/index.html

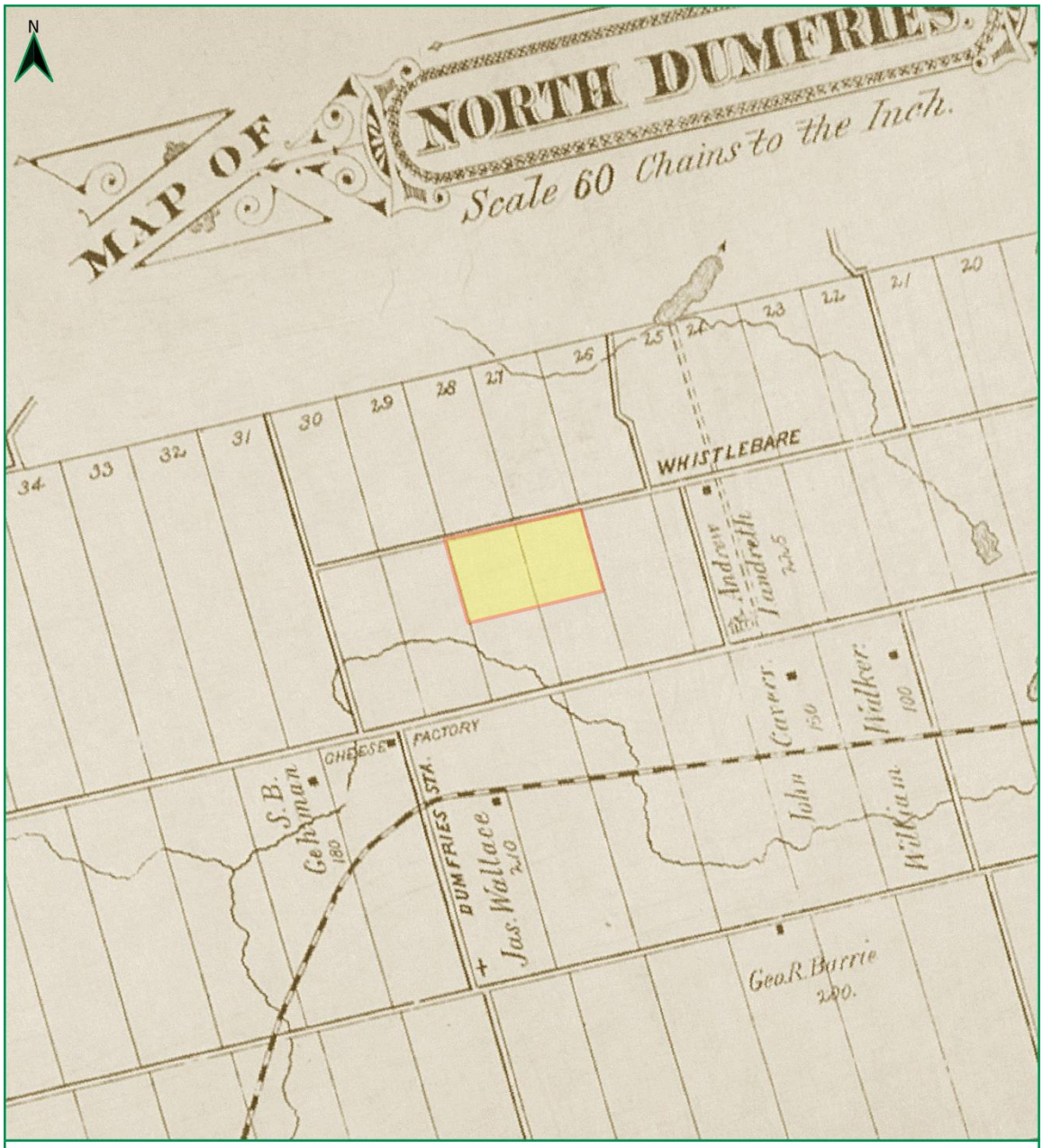
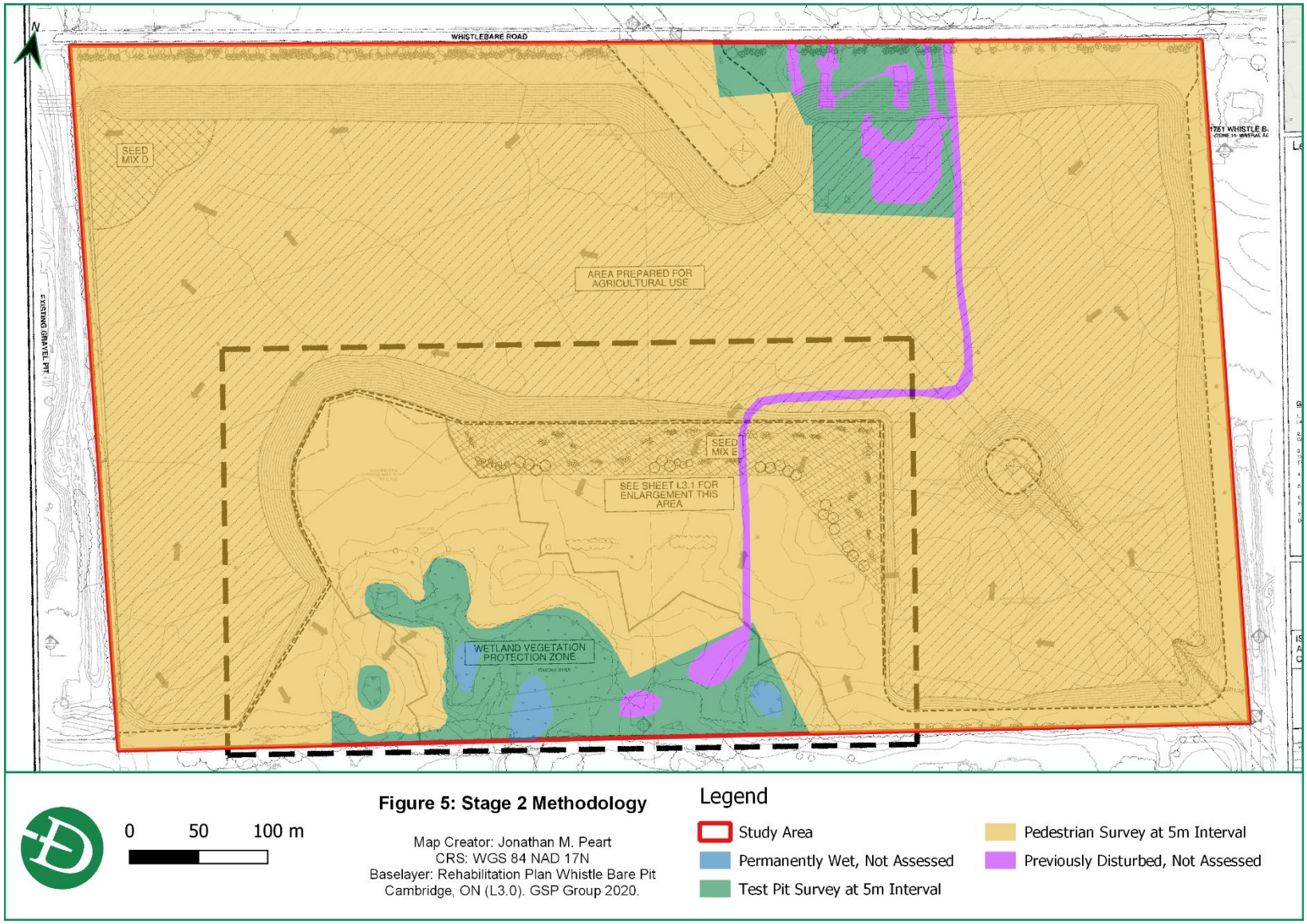


Figure 2: Portion of the 1877 Historical Atlas Map of North Dumfries Township

Map Creator: Jonathan M. Peart
CRS: WGS 84 NAD 17N
Baselayer: Walker & Miles. 1877. The Illustrated Historical Atlas of Waterloo and Wellington Counties, Ontario


April 2006
July 2015
Legend
Study Area
0
100
200
300
400 m
Figure 3: Selected Aerial Imagery
Map Creator: Jonathan M. Peart
CRS: WGS 84 NAD 17N
Baselayer: Google Earth Aerial Imagery


N
0
50
100 m
Figure 4: Stage 2 Methodology
Map Creator: Jonathan M. Peart
CRS: WGS 84 NAD 17N
Baselayer: Google Satellite Imagery
Legend
Study Area
Photo Location and Direction
Permanently Wet, Not Assessed
Test Pit Survey at 5m Interval
Pedestrian Survey at 5m Interval
Previously Disturbed, Not Assessed


N
WHISTLEBARE ROAD
SEED MIX D
AREA PREPARED FOR AGRICULTURAL USE
EXISTING GRAVEL PIT
SEED MIX E
SEE SHEET L3.1 FOR ENLARGEMENT THIS AREA
WETLAND VEGETATION PROTECTION ZONE
0
50
100 m
Figure 5: Stage 2 Methodology
Map Creator: Jonathan M. Peart
CRS: WGS 84 NAD 17N
Baselayer: Rehabilitation Plan Whistle Bare Pit
Cambridge, ON (L3.0). GSP Group 2020.
Legend
Study Area
Permanently Wet, Not Assessed
Test Pit Survey at 5m Interval
Pedestrian Survey at 5m Interval
Previously Disturbed, Not Assessed

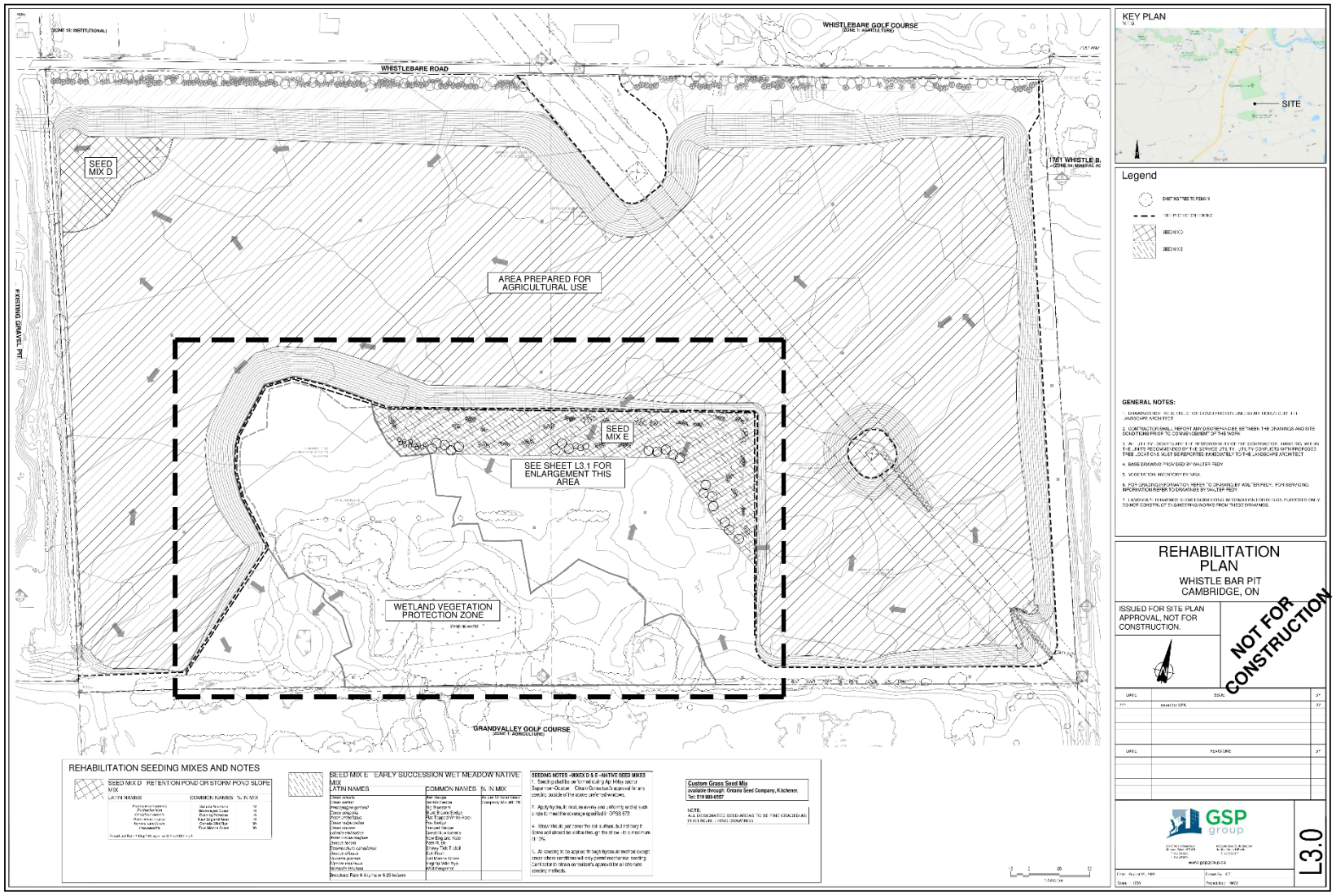


Figure 6: Development Map provide by client

9.0 Photos

9.1 Field Photos

Photo 1: Test Pit Survey at 5m Intervals, looking east

Photo 2: Test Pit Survey at 5m Intervals, looking northeast

Photo 3: Test Pit Survey at 5m Intervals, looking north

Photo 4: Test Pit Survey at 5m Intervals, looking east

Photo 5: Test Pit Survey at 5m Intervals, looking south

Photo 6: Test Pit Survey at 5m Intervals; disturbed foundation not assessed, looking north

Photo 7: Test Pit Survey at 5m Intervals; disturbed outbuilding not assessed, looking east

Photo 8: Test Pit Survey at 5m Intervals, looking west

Photo 9: Test Pit Survey at 5m Intervals, looking north

Photo 10: Test Pit Survey at 5m Intervals; disturbed house not assessed, looking north

Photo 11: Test Pit Survey at 5m Intervals, looking north

Photo 12: Test Pit Survey at 5m Intervals; disturbed house not assessed, looking west

Photo 13: Test Pit Survey at 5m Intervals; disturbed house not assessed, looking southeast

Photo 14: Test Pit Survey at 5m Intervals, looking east

Photo 15: Pedestrian Survey at 5m Intervals, looking east

Photo 16: Pedestrian Survey at 5m Intervals, looking south

Photo 17: Pedestrian Survey at 5m Intervals, looking east

Photo 18: Pedestrian Survey at 5m Intervals, looking north

Photo 19: Pedestrian Survey at 5m Intervals, looking north

Photo 20: Pedestrian Survey at 5m Intervals, looking north

Photo 21: Pedestrian Survey at 5m Intervals, looking west

Photo 22: Pedestrian Survey at 5m Intervals, looking southeast

Photo 23: Pedestrian Survey at 5m Intervals, looking northeast

Photo 24: Pedestrian Survey at 5m Intervals, looking west

Photo 25: Pedestrian Survey at 5m Intervals, looking east

Photo 26: Pedestrian Survey at 5m Intervals, looking south

Photo 27: Pedestrian Survey at 5m Intervals, looking west

Photo 28: Pedestrian Survey at 5m Intervals, looking west

Photo 29: Test Pit Survey at 5m Intervals, looking west

Photo 30: Pedestrian Survey at 5m Intervals, looking west

Photo 31: Pedestrian Survey at 5m Intervals, looking east

Photo 32: Pedestrian Survey at 5m Intervals, looking west

Photo 33: Pedestrian Survey at 5m Intervals, south

Photo 34: Pedestrian Survey at 5m Intervals, looking northeast

Photo 35: Pedestrian Survey at 5m Intervals, looking southeast

Photo 36: Pedestrian Survey at 5m Intervals, looking south

Photo 37: Pedestrian Survey at 5m Intervals, looking north

Photo 38: Pedestrian Survey at 5m Intervals, looking west

Photo 39: Pedestrian Survey at 5m Intervals, looking south

Photo 40: Pedestrian Survey at 5m Intervals, looking north

Photo 41: Test Pit Survey at 5m Intervals, looking south

Photo 42: Pedestrian Survey at 5m Intervals, looking east

Photo 43: Pedestrian Survey at 5m Intervals, looking north

Photo 44: Test Pit Survey at 5m Intervals, looking west

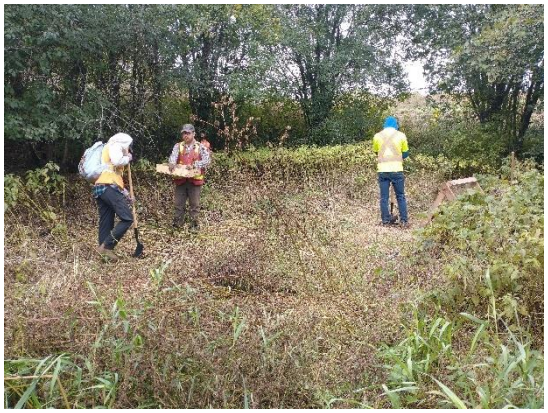


Photo 45: Test Pit Survey at 5m Intervals, looking north

Photo 46: Test Pit Survey at 5m Intervals, looking east

Photo 47: Test Pit Survey at 5m Intervals; permanently wet area not assessed, looking east

Photo 48: Test Pit Survey at 5m Intervals, looking east

Photo 49: Test Pit Survey at 5m Intervals, looking south

Photo 50: Permanently Wet Areas Not Assessed, looking south

Photo 51: Test Pit Survey at 5m Intervals, looking south

Photo 52: Pedestrian Survey at 5m Intervals, looking north

Photo 53: Disturbed Boulder Pile Not Assessed; south-central portion of Study Area, looking south

Photo 54: Test Pit Survey at 5m Intervals; looking north

Photo 55: Permanently Wet Area Not Assessed, looking south

Photo 56: Ground Surface; disturbed area south of the residence

Photo 57: Ground Surface; disturbed area south of the residence

Photo 58: Typical Test Pit; south-central portion of Study Area

Photo 59: Typical Test Pit; south-central portion of Study Area

9.2 Artifact Photos

Plate 1: Cluster H1 (AiHc-545); scalloped edgeware sherd (Cat#7)

Plate 2: Cluster H1 (AiHc-545); unglazed red earthenware (Cat#11)

Plate 3: Cluster H1 (AiHc-545); new palette blue sherd (Cat#12)

Plate 4: Cluster H1 (AiHc-545); Jackfield-type ware sherd (Cat#15)

Plate 5: Cluster H1 (AiHc-545); white clay pipe stem fragment (Cat#16)

Plate 6: Cluster H1 (AiHc-545); glazed red earthenware (Cat#20)

Plate 7: Cluster H1 (AiHc-545); wrought nail (Cat#22)

Plate 8: Cluster H1 (AiHc-545); cut nail (Cat#23)

Plate 9: Cluster H1 (AiHc-545); late palette painted sherd (Cat#41)

Plate 10: Cluster H1 (AiHc-545); white clay pipe bowl fragment (Cat#53)

Plate 11: Cluster H1 (AiHc-545); brown transfer printed sherd (Cat#54)

Plate 12: Cluster H1 (AiHc-545); blue transfer printed sherd (Cat#55)

Plate 13: Cluster H1 (AiHc-545); flow blue transfer printed sherd (Cat#56)

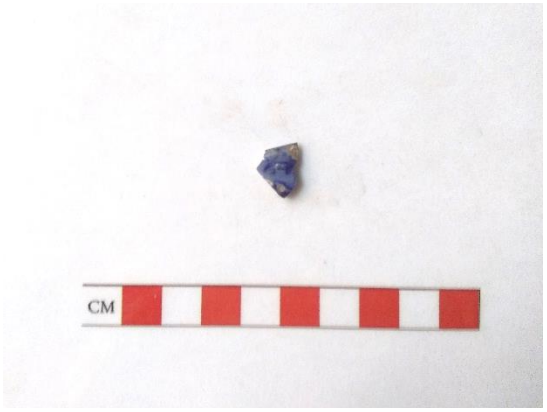


Plate 14: Find Spot 28; debitage

Plate 15: Find Spot 29; debitage

Plate 16: Cluster H2 (AiHc-546); moulded ironstone sherd (Cat#127)

Plate 17: Find Spot 42 (AiHc-549); projectile point

Plate 18: Find Spot 43; lithic tool

Plate 19: Find Spot 44; debitage

Plate 20: Cluster P1 (AiHc-548); debitage (Cat#133)

Plate 21: Cluster P1 (AiHc-548); projectile point (Cat#134)

Plate 22: Cluster P1 (AiHc-548); debitage (Cat#135)

Plate 23: Find Spot 48; debitage

Plate 24: Find Spot 49 (AiHc-550); projectile point

Plate 25: Find Spot 50 (AiHc-551); projectile point

Plate 26: Cluster H3 (AiHc-547); decal printed porcelain (Cat#139)

Plate 27: Cluster H3 (AiHc-547); RWE sherd (Cat#141, on left) and ironstone sherd (Cat#142, on right)

Plate 28: Cluster H3 (AiHc-547); painted porcelain cup handle (Cat#143)

Plate 29: Find Spot 60; debitage

10.0 Appendix

10.1 Euro Canadian Artifact Descriptions

10.1.1 Ceramic Ware Types

Pearlware

The term pearlware denotes an early variety of refined white tableware that was first produced in 1779 by Josiah Wedgewood; it remained popular on Euro-Canadian sites in Southern Ontario until the 1830s, when it was supplanted by later RWE varieties such as whiteware and ironstone (Adams 1994). Pearlware can be easily identified by a bluish glaze that appears along footing crevices due to the addition of cobalt to the glaze (Adams 1994) in an attempt to imitate Chinese porcelain.

RWE

In the 1820s, the blue-tinted pearlware glaze gave way to a whiter variety that some archaeologists have taken to calling whiteware; like pearlware, however, this term was not used by manufacturers. According to Miller (1980a:18), the white appearance of whiteware was caused by reducing the amount of cobalt added to the glaze and adding it instead to the paste. It was manufactured by many different recipes, however, and can be difficult to distinguish from other ceramics in the period, including sherds of pearlware, especially when examining small sherds. As Miller suggests,

> *…if an assemblage of ceramics from the first half of the 19th Century is placed before six archaeologists and they are asked for counts of creamware, pearlware, whiteware, and stone china wares, the results will probably be six different enumerations*
>
> Miller 1980a:2

Accordingly, the term RWE is used in this report to identify whiteware sherds as well as any sherds that are too small to distinguish between whiteware, pearlware or ironstone (noting that this gives a conservative date to any pearlware sherds not correctly identified).

Ironstone

Ironstone was a variety of RWE designed by the Turner family in the late 1700s (Tharp n.d). Like its contemporaries, it featured a white surface, but with a bluish tint. Furthermore, ironstone vessels were usually thicker than earlier whiteware varieties with a dense, heavy paste. The impetus behind their development was a desire among Staffordshire potters to find a cheap alternative to imported porcelain. By 1813 James Mason had reworked and patented “ironstone china.” The patent lasted only fourteen years; by that time a variety of Staffordshire potteries were producing a similar product. Nevertheless, the Mason’s brand name had become associated with all of the various stone china ceramics that were in production. Ironstone began to be imported from England to Canada during the 1840s and came to dominate the ceramic trade during the middle part of the century (The Potteries.org 2003). In terms of appearance, ironstone vessels were commonly left plain with infrequent applied surface decoration, although moulded designs were common (Adams 1994).

Porcelain

Porcelain was a variety of refined white earthenware, first manufactured in China in the 16th Century. Porcelain wares are produced with very high firing temperatures resulting in a partial vitrification of the paste. Vessel bodies tend to be translucent and can be very thin. Because of its prohibitive cost, porcelain is rare on 19th Century sites in Ontario but became relatively common by the 20th Century as less expensive production techniques were developed in England, Germany and Holland (Kenyon 1980b).

Throughout the 19th Century, potters in Staffordshire, England, sought to replicate Chinese porcelain resulting in the creation of many variations of refined white earthenware, including creamware, pearlware and whiteware. English porcelain, also known as bone china or English

soft-paste porcelain, was the most common variety of porcelain represented in Euro-Canadian sites throughout the 19th Century (Majewski and O'Brien 1987: 129). It was a vitreous ceramic with high silicon oxide content (although not as high as Chinese porcelain) that maintained glass-like sharpness on breakage. Given its cost, its presence of porcelain in large numbers on Euro-Canadian sites in Southern Ontario usually indicates a higher economic status.

Semi-Porcelain

Semi-porcelain is a variety of refined white earthenware featuring a thick body and hard, opaque paste. It was developed by English potters during the first half of the 19th century in an attempt to create a less expensive alternative to imported porcelain. By the latter half of the century, semi-porcelain vessels became widespread throughout North America. Decoration with hand-painted lustrous gold over glaze or 'gilding' became popular in the 1880s and persisted until the 1940s (Hughes 1961:82).

Red and Yellow Earthenware

Red and yellow earthenware are utilitarian wares that are fired at a lower temperature than more RWE varieties, and are made from a coarser, more porous paste. Earthenwares cannot be used to date an archaeological assemblage since they were in use throughout the entirety of the 19th century. Their frequency on sites began to decline slowly from the 1850s onwards with the importation of stoneware from the United States and then dramatically after 1890 when they were replaced by glass jars (Miller 1980b:9). Earthenware vessels were also less expensive than other, more refined tablewares. As a result, an abundance of earthenware pieces relative to other ware types, especially on a late 19th century site, may indicate lower economic status.

Jackfield-type Ware

Jackfield-type wares take their name from the Shropshire village of Jackfield where they were first produced by the potter Richard Thursfield from 1751-72 (Downman 1896). The wares were initially made with a red clay fabric, but Thomas Whieldon and other Staffordshire potters used purplish and greyish clays (Maryland Archaeological Conservation Lab 2002). The Jackfield style began being produced again in the early 1800s and again often using a red clay fabric. Unlike red earthenware, however, the walls are thin, similar to refined earthenwares. The wares feature a glossy black glaze and were almost exclusively tea service items, although Toby jugs also feature. The wares were commonly embossed and sometimes highlighted with yellow patterns. Jacobite-era vessels often had inspirational writing, and the Jackfield-type revival in the Victorian era as mourning period ware was often gilded with personal inscriptions. A resurgence of Jackfield-type ware occurred in the late 19th century when terra cotta or white earthenware body were used.

10.1.2 Ceramic Decorative Styles

Hand Painting

Hand painted floral tea and dinner ware sets were a staple ceramic item in the 1800s. From 1785 to 1815, potters used metal oxide colours that produced subdued, earth tones including brownish orange, olive-green, raw umber, and a limited use of blue. Cobalt blue, often referred to as Early Palette Blue, was the most dominant colour observed between 1815 and 1830, and typically featured large brushstrokes. Between 1830 and 1870, a growing variety of chrome colours, often referred to as Late Palette colours, were popular for RWE and ironstone dinner and tea sets (Adams 1994). By the end of the century, blue had once again emerged as the post popular colour for hand painted vessels.

Edging

Edging is used to describe ceramics where decoration is concentrated on moulding or colouring the rim of the vessel, most commonly plates and other flatware. The earliest edged vessels bore asymmetrical, rococo shell-edging and date from roughly 1775. Over time, the style of the edge design changed, becoming symmetrical scalloping from around 1800, to straight-edged with feathering by 1840 and non-embossed, straight edges by 1860. Dates vary somewhat for the popularity of the dominant colours, blue and green, but blue scalloped edged vessels date from 1820 to 1840, blue unscalloped edged vessels from after 1860(Hunter and Miller 2009).

Transfer Printing and Flow Transfer Printing

The technique of transferring a pattern from an engraved metal plate to the surface of a ceramic vessel is thought to have developed in the mid-18th century (Jervis 1911); it became more widely used among Staffordshire potteries in the 1790s (Shaw 1829). In Southern Ontario, transfer printing was popular through the first half of the 19th Century before simpler techniques or no decoration whatsoever became popular. It underwent a revival after 1870 until the end of the Century (Majewski and O'Brien 1987:145, 147). Blue transfer print ware was a popular decorated ceramic ware manufactured throughout the 19th century on various wares and it was the dominant colour available for printed wares before 1830. Brown and black transfer print wares were popular for a long span roughly between 1830 and 1870 (Adams 1994:103).

Flow transfer printing was similar to regular transfer printing, with the exception that designs were allowed to bleed into the glaze giving them a misty appearance. Flow transfer printing was popular in the late 1840s and 1850s and was later revived in the 1890s. Traditionally, blue is the most predominant colour used in flow-transfer printing, although examples in black do exist (Adams 1994).

Decal Printing

Similar to transfer printing, decal printing involved transferring an image to a vessel from paper backed sheets that had been varnished from a lithographic plate. Decal printed vessels were first introduced in the 1830s, but were not common. French potteries improved the technique in the late 1870s, and by the 1890s decal [printed vessels began appearing more regularly within North American markets (Majewski and O'Brien 1987, Maryland Archaeological Conservation Lab 2002). One sherd of decal printed porcelain retrieved from the Stage 2 assessment, suggestive of a late 19th or early 20th century occupation.

Banding

Banding is one of several terms that denotes the use of an applied coloured slip to decorate the edge of a vessel; others include annular ware and slip-decorated ware. As the name implies, simple bands of colour were a common motif among banded vessels. Banding also includes dendritic (or mocha) designs, cabling, and cat's eye designs, as well as machine-turned impressed patterns. Banding was common on ceramic vessels throughout the 19th century. As the century progressed, the patterns tended to become simpler and blue the most dominant colour (Adams 1994).

10.1.3 Household Artifacts

Bottle Glass

Bottle glass fragments are generally not diagnostic and are often simply categorized according to colour. Clear, or colourless glass was uncommon prior to the 1870s. Until 1880, clear glass bottles often displayed an aqua tinge that resulted from the iron additives used to de-colourise it. Clear or colourless glass came into much more widespread use after the development of automatic bottle manufacturing machines in the early 20th century (Lindsey 2021).

10.1.4 Personal Artifacts

White Clay Pipes

White clay pipes were popular throughout the 19th century, with a decline in use around 1880 due to the rise in popularity of briar pipes and cigarettes (Kenyon 1980). Most white clay pipes were manufactured in either Québec or Scotland, with occasional examples from English, Dutch, French, and American manufacturers. The maker's name is commonly impressed on one side of the stem with the city of manufacture on the opposite side, although this did not become common practice until after 1840.

10.1.5 Structural Artifacts

Nails

Originally, all nails were hand made and required skill, as well as a forge. As a result, wrought nails were relatively expensive and methods were sought to have them machine made. Whereas cut, or square nail manufacture began in the late 1790s, cut nails only become readily available in Upper Canada by the 1830s. Cut nails revolutionized house framing and were common for a long period, from approximately 1830 to 1890 by which time they had been largely supplanted by wire nails. Wire drawn nails are identical to the type of nails used today, with their round heads and wire shafts (Adams 1994).

Window Glass

Window glass can be temporally diagnostic in a limited manner, but only if at least ten specimens are available. In the 1840s, window glass thickness changed dramatically, in large part due to the lifting of the English import tax on window glass in 1845. This tariff taxed glass by weight and encouraged manufacturers to produce thin panes. Most window glass manufactured before 1845 tended to be thinner, while later glass was thicker. However, because window glass thickness varied even within a single pane, an assemblage of ten specimens is required to provide an adequate sample (Kenyon 1980).